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JULY, 1871.

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ON CUNDURANGO.

BY THOMAS ANTISELL, M. D.

In the month of March of this year, Mr. Flores, Minister of Ecuador at Washington, forwarded a box containing a vegetable medicament which he had received from his government for presentation to the State Department, and requested that some analyses and experiments might be made with it, to test its medicinal value. The samples of the drug were stated to have grown in the province of Loja, Ecuador, and extracts from the official journal accompanied the parcel, showing that great medicinal virtues were attributed to the wood and bark of the tree known as *Cundurango*. The extracts were testimonials from Doctors Cæsares and Eguigureu of that province, as to its great value in cancer, fungus hæmatodes and constitutional syphilis. These statements were supported by a letter from Mr. Rumsey Wing, our minister resident at Ecuador, to Hon. H. Fish, Secretary of State, testifying to the medicinal virtues of the plant as admitted by the natives of Loja, in which he mentions that a decoction of the fruit is known to be a poison, and that the parts of the plant used medicinally are the bark and leaves.

During the month of April a sample of the plant (small branches) were received at this Department, from Hon. Mr. Fish, with the request to have an analysis made and reported to him for the benefit of the Ecuador government. Meanwhile the plant itself had been tried, in the form of a decoction, upon some patients in this city affected with cancer, and with apparent considerable relief to the sufferers.

About one pound and a quarter in weight were received for analysis. The sample consisted of stem and branches of apparently a shrub,

but was unaccompanied by leaf or root, so that the botanical characters of the plant could not be determined.

The stem is woody and covered by a greenish or ash grey bark, the former tint being due to the lichens on its surface; the branches are from a half inch to a little over an inch in diameter, averaging about the thickness of the finger; the woody fibre is straw colored and brittle, breaking with a sharp fracture; it is almost tasteless, having a slightly aromatic and bitter flavor when chewed.

The bark contains whatever medicinal virtues are in the plant; of grey color, slightly ribbed or fluted longitudinally from unequal contraction while drying on the branch; increasing in thickness in proportion to the diameter of the woody stem, in the thicker branches constituting more than half the weight of the whole, in the thinner somewhat less than half; readily separable from the stem by pounding or bruising, when it comes off in clean longitudinal pieces, brittle in the transverse fracture; of a warm, aromatic, camphor and bitter taste, resembling the cascarilla of the old collections. Under the lens it is readily resolvable into three layers: 1st, the inner layer or cambium of reticular woody tissue, having granules of starch and particles of resin imbedded. 2d, a middle layer of woody fibre and dotted ducts; resinous particles also in this layer; and 3d the cuticular or outer layer of cells of a brownish color, and containing coloring matter and tannic acid.

The usual methods of filtration from digestion in the usual solvents, as gasolene boiling at 110°, ether, alcohol, carbon disulphide and water &c. were adopted.

1. Ratio of bark to wood

Bark	49.72	} Mean of these
Wood	50.28	
	<hr/> 100.	experiments.

2. 100 parts of bark yield

Moisture at 100° C.	8.
Mineral salts (ash)	12.
Vegetable substance	80.
	<hr/> 100.

3. This vegetable matter was separable into the following:

Fatty matter soluble in ether and partially in strong alcohol	.7
Yellow resin soluble in alcohol	2.7
Gum and glucose from starch	.5
Tannin, yellow and brown coloring matters (extractive)	12.6
Cellulose, lignin, &c.	63.5
	<hr/> 80.

No crystalline alkaloid or active principle was separable by the usual methods of proximate analysis. A plan similar to that used for cinchona alkaloids and also that by precipitation with diacetate of lead was tried. By distillation no volatile oil or acid was obtained.

Whatever medicinal virtues the plant may possess must reside either in the yellow resin or in the extractive; the former is soluble in alcohol and the latter in water; in the watery decoction some of the resin is diffused, but the greater portion of the resin is not extracted by the water. The therapeutic position of the plant, judged from analysis, might be among the aromatic bitters.

*Washington, D. C., May 27, 1871.*

ON SOLUTIONS OF ALKALOIDS IN MEDICATED WATERS.

BY THE EDITOR.

In a letter written shortly after his return home from the Philadelphia College of Pharmacy, where he graduated in March last, the late John D. Owen communicated to the editor an observation which is of particular interest to the medical and pharmacial professions. At our request, he commenced some experiments, which remained unfinished when he was prostrated by sickness. Since his demise we have verified his observation by experiment, and now communicate it to the readers of this journal, together with some observations on the subject.

Mr. Owen had dispensed a prescription ordering sulphate of morphia to be dissolved in peppermint water; the latter had been made, according to the Pharmacopœia, by triturating the oil with carbonate of magnesia and water. When the vial was brought back for renewal

Mr. Owen observed that the sides were covered with crystals, which he collected, and proved to be morphia.

The process of the Pharmacopœia alluded to, yields, in all cases, a medicated water possessing an alkaline reaction, which is shown by its effect upon a diluted tincture of turmeric, the latter turning reddish brown. If chloride of ammonium and ammonia water are added to such a medicated water, any soluble phosphate will in a short time produce a dense cloudiness and finally a precipitate. It is unnecessary to enter into the causes of the solubility of magnesia under these circumstances; the fact is a plain one, and the possibility of dangerous effects very obvious. Neutral salts of insoluble (in water) alkaloids may be dissolved in such medicated waters, but the alkaloids will be gradually precipitated in a form in which they cannot be uniformly diffused in the liquid even by agitation; hence the possibility, if the separated alkaloid does not firmly adhere to the vial, that the last dose may contain an excessive amount of a poisonous article; while, in case it should adhere with sufficient firmness, the result might be, at least, disappointment in the effects, if nothing worse, in consequence of insufficient medication.

Heretofore we have advocated the preparation of medicated waters by distillation from the drugs, solely for the reason of their superior flavor and taste. The facts pointed out above furnish a by far stronger argument. As long, however, as the Pharmacopœia allows the preparation of these waters from the volatile oils by the aid of magnesia, it would appear to be the plain duty of the pharmacist to neutralize or faintly acidulate these waters in all cases where salts of poisonous alkaloids are to be dissolved therein.

#### EXAMINATION OF SUBNITRATE OF BISMUTH.

By JOHN D. OWEN, of Louisville, Ky.

(From the Author's Inaugural Essay).

Being requested to make an examination of the subnitrate of bismuth of commerce, I procured four samples, one from each of the following firms: Messrs. Powers & Weightman, Rosengarten & Sons, A. W. Wright & Co. and Kurlbaum & Co. Taking two grammes of each sample, with each of which I mixed two grammes pure carbonate of soda and a small quantity of distilled water, I then boiled them for a short time which caused a mutual decomposition, forming carbonate of bis-



muth, which remained in the form of a precipitate, and nitrate and chloride of sodium, which went into solution with the excess of carbonate of soda. The carbonate of bismuth being collected on a filter, washed and dried, was reduced by ignition to the oxide of bismuth and weighed as such.

To the filtrate containing the carbonate and nitrate of soda and chloride of sodium, I added a volumetric solution of sulphuric acid to neutralize the carbonate of soda. 38.75 c.c. volumetric solution of sulphuric acid neutralized two grammes of carbonate of soda, therefore 38.75 c.c. acid solution contains 1.5094 grammes of anhydrous sulphuric acid. The difference then between the amount used and the amount required to neutralize two grammes of carbonate of soda is equal to the nitric acid and chlorine in combination with the soda.

I then dissolved two grammes of each sample of subnitrate of bismuth in hot dilute nitric acid. Three of the samples left residues of chloride of silver, which I reduced by a solution of caustic soda, and glucose to metallic silver, and after burning and careful washing with dilute acetic acid to remove the last traces of soda, and burning again I weighed it as metallic silver. To the filtrates containing the solutions of nitrate of bismuth I added a solution of nitrate of silver, which gave a precipitate in two of the samples, in the other two only a slight turbidity. The precipitates I reduced to metallic silver as already described, ignited, weighed and calculated the amount of chlorine from that of the silver. I then tested the samples in Marsh's apparatus, one of them gave metallic spots, which I tested with a solution of hypochlorite of soda, and they proved to be *Arsenic* by their instantaneous disappearance when touched by this reagent.

Afterwards I made an analysis of each sample in the following manner, by subjecting the four samples at the same time to an air bath of 120° C. for two and a half hours, and then weighed, the loss being the amount of water, then ignited and weighed again, the loss this time being the nitric acid, with a certain amount of water which could not be driven off at 120°C., said water being determined by deducting the amount of nitric acid, etc., found volumetrically. The amount left after driving off the nitric acid and water, was the oxide of bismuth and silver. The following tables show the results of my labors, which were done at the laboratory of Dr. F. A. Genth, to whom I am indebted for the advice given and the interest taken in my labors.

[We omit the analytical details and calculations and condense the author's results into the following tables:]

100 parts of the four samples yielded

	Powers & Weightman.	Rosengarten & Sons.	A. W. Wright. & Co.	Kurlbaum & Co.
BiO <sub>3</sub>	80.79	81.67	81.08	81.73
AgCl	0.37	—	trace	trace
As	—	—	trace	—
Cl	0.18	trace	trace	0.78
HO } at 120° 2.30 {	4.31	1.80 {	2.02 {	1.54 {
by ignition 2.01 {	—	2.75 {	3.28 {	2.55 {
NO <sub>5</sub>	14.85	14.45	13.77	14.27
The composition of these samples is as follows:				
BiO <sub>3</sub> NO <sub>5</sub>	79.20	77.07	73.44	76.90
BiO <sub>3</sub> , 3HO	18.33	21.24	23.88	15.48
BiCl <sub>3</sub> + 2(HO, BiO <sub>3</sub> )	1.36	trace	trace	5.94
AgCl	0.37	—	trace	trace
Arsenic	—	—	trace	—
Water uncombined	—	—	—	—
(difference)	0.74	1.69	2.68	1.68
	100.00	100.00	100.00	100.00

#### PLEIS' FIT POWDERS.

By A. W. MILLER, M. D.

This nostrum is advertised extensively in this city and vicinity as an infallible remedy for epilepsy, popularly termed "fits." The circulars issued by the proprietor distinctly claim that these powders have never failed when used according to directions. Presuming this assertion to be correct, they would form one of the most valuable additions to our materia medica, as epilepsy is well known to be one of the most intractable of all chronic diseases, baffling in but too many instances the most skillful practitioners.

In order to determine, if possible, in what respect this article differs from the remedies usually resorted to by the profession, a box of the preparation was examined. It contained 24 powders of odd sizes, folded in a slovenly manner, and presenting a general untidy appearance. The division of the material had evidently not been very carefully managed, as scarcely any two of the papers contained the same amount. The weight of the separate powders was found to vary

between 14 and 31 grains, showing a difference of over 120 per cent. between these extremes.

The peculiar odor of gentian was very prominent, and none other could be recognized. The taste was decidedly saline, and slightly bitter, producing a cooling impression upon the tongue, indicative of ready solubility. A little of the powder introduced into an alcohol flame, gave rise to the peculiar violet color characterizing potassium salts; it was free from the slightest yellowish tinge, indicating the absence of all sodium compounds.

Three of the powders of medium weight were agitated with an ounce of water; the mixture was filtered and the residue washed with water. The solution was partially evaporated and set aside to crystallize. After several days a crop of colorless cubical crystals was obtained, weighing, together with the adhering extractive matter, 52 grains. The crystals were to all appearances insoluble in alcohol, permanent in the air, and very freely soluble in water. Tartaric acid added to the solution yielded after a little while crystals of bitartrate of potassa, confirming the existence of potassium. Another portion of the solution mixed with chlorine water, and then shaken with ether, gave unmistakable evidence of the presence of bromine by the strong reddish tint imparted to the superstratum of ether. A third portion, treated with sulphuric acid and binoxide of manganese, eliminated bromine, perceptible by its colored vapor and irritating odor. Nitrate of silver added to a fourth portion of the solution gave a slightly yellowish precipitate, which was insoluble in nitric acid but soluble in ammonia.

From these various experiments it was concluded that the crystals consisted exclusively of bromide of potassium, contaminated with a little extractive matter from the gentian. Hydrate of chloral was excluded on account of the absence of its characteristic odor. As a portion of the powder, when heated with solution of caustic soda, gave off no ammoniacal odor, bromide of ammonium was likewise excluded. An examination of the powder with a microscope of low power did not reveal crystals of any other shape than the cubes and quadrangular prisms of bromide of potassium.

The residue on the filter, when evaporated to dryness, weighed 7 grains. As the extractive matter of gentian is freely soluble in cold water, the weight of this residue represented a considerably smaller quantity than that which the powders had originally contained. It

was deemed probable, therefore, that each powder was intended to contain about 15 grains of bromide of potassium, and about 5 grains of powdered gentian root. There is little doubt that the latter is added mainly for the purpose of altering the appearance of the coarsely powdered bromide of potassium.

Although there is perhaps nothing strictly injurious in this patent medicine, if we except the annoying skin disease occasionally following the continued use of bromide of potassium, it still remains an anomalous fact that the same remedy, in the effects of which the highest medical authorities are so often disappointed, is thus so boastingly put forth as a never-failing specific.

#### CARBOLIC ACID IN POWDER FORM.

BY CHAS. O. CURTMAN, M. D., Prof. of Chemistry Mo. Med. College.

The well-deserved favor in which carbolic acid is held by the profession has resulted in a wide-spread application of its different forms, as disinfectants, among the public. By passing into such general use, however, some difficulties have manifested themselves, and some accidents have occurred, owing to the inexperience of many who now handle this energetic preparation.

The most common form in which it has heretofore been supplied to the public for purposes of disinfection is that of a concentrated solution of the crude acid, containing a large percentage of cresylic acid, some rosolic acid, and more or less of pyrogenous oils. This preparation is quite corrosive, even when moderately diluted, and cases are not unfrequent in which deep ulcerations of the integuments, and even acute poisoning, have resulted from its careless employment.

In its application to the destruction of the larger parasites it requires considerable concentration, so that it will not destroy such animals as aphides and plant-lice without injuring, more or less, the plants themselves which those pests of the garden infest.

Some time ago the Messrs. G. Mallinckrodt & Co., chemical manufacturers of this city, supplied to me a preparation in which a dry argillaceous powder is used as a diluent of the acid instead of water, and the experiments made with this and, for comparison, with the aqueous solution, have satisfied me that this mode of preparing the carbolic acid for general use in dry form has some very decided advantages over the common solutions.

The powder used by me is quite dry, has very little coherence, is light and porous, little inclined to form lumps by exposure to moisture, and contains about 20 per cent. of the mixed tar acids, which gradually and slowly volatilize when the powder is exposed to the atmosphere.

That the corrosive qualities of the acid are considerably modified by this mode of dilution, and therefore an objectionable feature of the common solution obviated, without sacrificing any valuable property, I convinced myself by the following experiments:

A number of shrubs and flowers in my garden had become infested by swarms of various parasites, green and black lice, aphides of larger kind, &c. To destroy them, or at least drive them away, I used a spray syringe charged with water containing crude carbolic acid in various amounts. I began with  $\frac{1}{4}$  per cent., and gradually increased the quantity. A rose-bush was first selected, on which thousands of green insects were preying.

The weaker applications proved entirely unsuccessful, until above 4 per cent. of acid were used, when some of the animals died, but at the same time the rose-bush began to wither, and after a few weeks of sickly existence perished.

Similar results were obtained with a number of other plants subjected to a like treatment, some of them resisting larger amounts of acid, but all being materially injured or killed before all the animals were destroyed.

The powder containing about 20 per cent. of the acid was next sprinkled slightly over different plants. On the first day neither plants nor insects appeared to be affected. After three days but very few parasites remained on the plants, while no damage whatever had resulted to vegetable life, the plants remaining quite healthy and continuing to grow thriftily while under observation for some time after.

A continuous and regular exhalation of the acid vapor from the finely divided surface of the powder appears to be preferable to the more irregular diffusion resulting from evaporation of an aqueous solution, and, so far as safety in the hands of the inexperienced is concerned, I do not hesitate to give the powder form a decided preference over that of solution in liquids.

It would be well if during the revision of the U. S. Pharmacopœia now going on, the Committee would give some attention to this mode of dispensing the acid for general use, and would incorporate a pre-



paration of carbolic acid diluted with an argillaceous powder among the articles of our national standard.

Clay appears preferable to other substances for this purpose, on account of entering into no combination with the acid, but serving simply as a neutral, inert, mechanical diluent.

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#### ON ELIXIRS CONTAINING IRON.

By W. W. SEAY.

A considerable discussion has been carried on regarding the propriety of furnishing the various elixirs for the use of the profession and the public. My own experience has suggested a decided impression in their favor, and, while they can never take the place of similar officinal preparations, they can be made, with proper care, fully equal in medicinal effect, and certainly more agreeable to the taste. Whilst deprecating any fundamental change of our old time-honored and tried remedies, I think many of them could be improved in flavor and appearance, and do our art no discredit. I have known patients to absolutely refuse to take many of our tonics long before their use should have been discontinued, simply on the ground of their nauseous bitter taste. These elixirs are elegant in appearance, and have a decidedly pleasant flavor, which I think is a great consideration where medicines have to be taken for a length of time. As furnished us by large manufacturing firms, my observations are opposed to their usefulness, since in nearly every instance they lack the necessary strength. Certain salts of iron can be added to almost any of our tinctures (modified somewhat in preparation) without precipitation, and prove as useful as before their addition. I propose furnishing a few recipes, the formulæ of which I have originated and found useful. I do not claim any great scientific achievement for them, but I do think they are preferable to any I have yet seen in use. They retain their *tannic acid and natural combinations apparently unchanged, at all events, without any great chemical disturbance*. It will be observed that alcohol of officinal dilute strength is taken, and the drugs exhausted by it, and *then* sugar is added, which *increases the bulk* without interfering with its *solvent action*. The general full dose being in most cases about one-half fluidounce, the spirituous strength will amount to only one and one-third fluidrachms of officinal alcohol,

which quantity cannot be considered very objectionable. Wines or brandies can be substituted for a portion of alcohol, if deemed advisable, account being taken of difference of alcoholic strength, the object being to approach as nearly as possible to the menstruum ordered for similar officinal tinctures. Like all tinctures, they are directed to be taken in a little water. The subjoined preparation of Elixir Cinchonæ et Ferri Hypophosphitis, I can specially recommend as an elegant and beautiful one, having taken it myself for some time past, where phosphorus was indicated. About its permanence beyond a few weeks I cannot vouch, as I have not laid by any samples for a great length of time to test it. Hypophosphorous acid has a great affinity for oxygen, and how far the sugar will protect it in the presence of organic matter I am unable to state. I have kept it on hand without change for about two months. The solutions can be kept separately and mixed as wanted, and an elegant preparation insured.

*Elixir Cinchonæ et Ferri Hypophosphitis.*

Elixir Cinchonæ,	.	.	.	.	Oj,
Syr. Ferri Hypophosphitis,	.	.	.	.	f3ij,
Alcoholis Fortior.,	.	.	.	.	f3ss,
Ac. Hypophosphorosi,	.	.	.	.	f3iv.

Mix the syrup, acid and alcohol together, and then add to elixir.

The Elixir Cinchonæ designated is that published by me in the June number Amer. Journal of Pharmacy, 1871. The Syr. Hypophosphite Iron is that of W. S. Thompson, and the Hypophosphorous Acid that of Parrish, in Parrish's excellent "Treatise on Pharmacy."

The dose for an adult would be about one-half fluidounce, containing thirteen grains red Peruvian bark, nearly one-half fluidrachm of the Syrup of Ferrous Hypophosphite, six and one-half minims of 10 per cent. hypophosphorous acid.

*Elixir Gentianæ et Ferri Chloridi.*

Gentian, in coarse powder,	.	two	troyounces,
Recent Orange Peel, bruised,	.	two	"
Cardamom Seed, powdered,	.	one-half	troyounce,
Alcohol Dil., q. s.			

Percolate s. a. until twenty-one fluidounces have been obtained. To this add and dissolve

Sacch. Alb. Pulv, . . .	thirty-one av. ounces,
Acid. Muriat. Pur., . .	f3ij, .
Sol. Ferri Chloridi (FeCl), .	f3iv.

The strength of the elixir is about the same as officinal tinctura gentianæ co.; it contains the equivalent of ten drops officinal tr. ferri chloridi to each fluidounce.

Any elixir that may be desired with chloride of iron can be made in the same way, substituting other drugs instead of gentian. I will furnish my recipes with other salts of iron, for future numbers of the Journal, as I can find the time. I think if druggists will give these recipes a fair trial, they will find the resulting elixirs will give better results than any that have heretofore been published.

New York, June 6th, 1871.

#### SODA MINT.

BY HENRY A. BORELL.

Editor Amer. Jour. Pharmacy:

The very popular "Soda Mint," so much employed as an antacid and carminative for *over-fed* infants and dyspeptics, was originally a favorite prescription of Dr. Geo. Norris, of this city. His formula was the following:

R. Sodæ Bicarb., . . .	3ss,
Spt. Ammon. Aromat., . .	3j,
Aquæ Menthæ Piperitæ, . .	Oj.

M.

Dose, from a dessertspoonful to a tablespoonful for adults; from half to one teaspoonful for infants.

There is evidently an error in the formula on page 247 of this journal.\*

#### NOTE ON GORDON'S GLYCERIN.

BY JOSEPH P. REMINGTON, Philadelphia, Pa.

Having had occasion to investigate more fully the quality of glycerin as it exists in this market, for the purpose of reporting further

\* The editor requests the readers to correct the error on page 247. Aq. Ment. vir. f3ij, should be f3xij.

on the subject at the next meeting of the American Pharmaceutical Association, the writer was led to seek for additional samples.

And, at the instigation of a member in Cincinnati, two samples taken from the common market were obtained, bearing the name and stamp of Wm. J. M. Gordon. It was ascertained that these were made very recently, and had but lately arrived from Cincinnati.

They were subjected to an examination, conducted in the same manner and with the same reagents used in the investigation reported at the last meeting in Baltimore, in 1870, and published in the Proceedings of the Association, Vol. 18, page 187, and republished in this journal, March number, 1871, page 119.

It will be seen by a perusal of the table below that there is a great difference in the quality of the samples of glycerin taken now and then:

	For Strength, Sp. Gr.	Color.	Odor when warmed.	Nit. Silver.	Sulphuric Acid.	For Sulphate of Lime.
Gordon's Pure Inodorous, tested 1871.....	1.253	None.	None.	No precipitate.	Slightly discolored.	No precipitate.
Gordon's Pure Concentrated, tested '71	1.240	Not quite colorless.	Slight.	Rose coloration.	Slightly discolored.	No precipitate.
Gordon's Pure, tested 1870.....	1.240	Yellowish.	Fatty.	Heavy white precipitate.	Discolored.	No precipitate.

	For Lime Salts, Ox-Ammon.	For Iron, Ferrocyanide Potassium.	For Metals, Hydrosulphate Ammonia.	For Sulphates, Chlor. Barium.	For Ethyl-Butyrate.	For Glucose.
Gordon's Pure Inodorous, tested 1871.....	No precipitate.	No precipitate.	No precipitate.	No precipitate.	Slight odor.	None.
Gordon's Pure Concentrated, tested '71	No precipitate.	No precipitate.	No precipitate.	No precipitate.	Slight odor.	None.
Gordon's Pure, tested 1870.....	Slight precipitate.	No precipitate.	No precipitate.	Slight precipitate.	Strong odor.	None.

In the course of correspondence with the manufacturer, the difference in the quality of the samples tested was accounted for by the fact of my obtaining a sample which had been made probably several years ago, and that recently there have been great improvements made in the manufacture of glycerin, and he was turning out now a glycerin that would compare more favorably.

It is hardly necessary for me to say that the results have verified his supposition, and it is but right that he should have the benefit of the examination, whatever that may be.

It is a source of pleasure to present the results above, and additional testimony is thus given to show that we need not seek foreign markets for fine glycerin, but it is also a source of regret to know that

the manufacturer has now out in the market a glycerin which does not do him justice, and is really not fit for internal administration. It would certainly serve his interests better, were he able, to recall it, but as that is impracticable every druggist will have to see that the next package of Gordon's glycerin that he buys is of recent manufacture.

# ELIXIR CINCHONÆ ET FERRI—CARBOLIC CERATE.

BY CHAS. A. BÖHME.

*Ferrated Elixir of Cinchona.* The revival of this topic in the *Journal* has led me to publish the following formula, which has been used with success for some years :

R	Ol. Aurantii	f3iv
	Ol. Cinnam.	℥ x
	Ol. Carvi	℥ xx
	Tinct. Zingiberis	f3j
	Tinct. Cardam.	f3j
	Magnesiae Carbon.	3j
	Sacchari	lbs. ij Avd.
	Ferri Pyrosphos.	grs. 1536
	Quiniae Sulph.	grs. 53
	Cinchonæ Sulph.	grs. 54

Mix the oils and tinct. of ginger, triturate with the magnesiae carb., add the tinct. cardam., triturate again and gradually add six pints of a mixture consisting of alcohol one pint, water four pints ; stir together a few minutes and filter. Take one pint of this liquid, mix it with the quiniae and cinchonae sulph. and add a few drops of sulphuric acid, sufficient to dissolve the alkaloids. Return this solution to the rest of the liquid, add the sugar and pyrophosphate iron and agitate occasionally until they are dissolved ; to complete, add sufficient of the alcohol and water mixture to make up to one gallon.

The green color may be corrected, if desired, by the addition of caramel, and some of the bitter taste covered by adding one ounce fl. ext. liquorice to each gallon. Prepared as above, the elixir contains twelve grains of pyrophosphate iron and the equivalent of twenty-four grains of cinchona bark (supposing it to contain three per cent. of alkaloids) in each fluid ounce.

This formula will be convenient for many pharmacists who do not



keep quinia or cinchonia in stock, as the sulphates of these alkaloids are used direct, thus saving the trouble of precipitating them. I have prepared samples of elixir from both sulphates and citrates of quinia and cinchonia, and find that one keeps as well as the other, and the testimony of physicians who have used both goes to show that they are equally efficacious.

My opinion is with Professor Maisch, that it is just as well to prepare elixir cinchonæ et ferri from the isolated alkaloids (or their salts) as from the bark, but of course each pharmacist can follow his own convictions in the matter, as the compound is not officinal.

*Carbolic Cerate.*

The following will be found to be an excellent formula for this preparation :

R. Adipis,	.	.	.	.	.	℥x,
Ceræ Albæ,	.	.	.	.	.	℥v,
Terebinth. Can.,	.	.	.	.	.	℥j,
Acid. Carbol.,	.	.	.	.	.	℥j.

Melt the lard and wax together, add the balsam fir, and when it begins to cool stir in the carbolic acid.

The addition of balsam fir to this preparation corrects the disagreeable odor of the acid, and renders it slightly adhesive, which is quite desirable when the compound is used as a dressing for burns, old sores, &c.

*Battle Creek, Michigan, June 10, 1871.*

ETHEREAL SOLUTION OF QUINIA.

By CHARLES RICE.

An ethereal solution of quinia has for several years been quite frequently prescribed by prominent physicians in this city and elsewhere, and I have been often requested, especially by physicians in the country, to furnish them a formula for its preparation. Although the different steps of the preparation are simple enough, yet I have repeatedly been informed of failures in the hands of others. In order to furnish to those, who are not practical pharmacutists or chemists, and also to those who have met with ill success, a formula for its

preparation, I shall give below the full detail, which will enable any one to prepare it for himself.

The object of the solution is to administer the alkaloid subcutaneously, in which case a much smaller dose is required, and a more speedy action is obtained than when administered internally. The idea of the subcutaneous use of quinia naturally suggested itself to practitioners from the previous similar administration of other alkaloids, especially morphia sulphas; but the neutral sulphate of quinia not being soluble to any useful extent in water, and the use of an acid solution being accompanied by pain and often severe inflammation, it was necessary to employ the pure alkaloid. And of all the different solvents, ether seems to have found the most favor.

By the way, I would remark that the practice of some apothecaries, of using dilute sulphuric acid in their solution of morphia sulphas, especially Magendie's, is highly reprehensible and denounced by physicians, on account of the pain and inflammation following its hypodermic use; water being all that is necessary.

Most authorities state that 1 part of quinia requires 60 parts of ether for its solution. This statement is quite correct, as far as the solution of the *dry* alkaloid is concerned, and it is by no means easy to prepare a solution even of that strength. But we may readily dissolve the quinia in ether, either at the moment of its precipitation from one of its salts, or at all events while yet in a moist state. The ethereal solution thus obtained may be concentrated to such a strength, that 2 minims of it will contain 1 grain (and even more) of quinia, although in this state the solution is too thick for use, and too liable to solidify. Hence quinia (recently precipitated, and yet moist) may be said to be soluble in ether in all proportions, as has been stated already by Bussy and Guibourt (*Journal de Pharmacie et Chimie*,) vol. 22, 1852, p. 413, 414.

The strength of the ethereal solution, as employed by Dr. B. W. McCready and other practitioners, is such that 5 minims contain 1 grain of quinia.

*Preparation.* Take 364 grains of sulphate of quinia, which has been (previously to weighing) deprived of its water by drying it at 212° F., mix it with 1 pint of water and add to it just sufficient dilute sulphuric acid to dissolve it. Filter if necessary, and wash the filter carefully. Introduce the solution into a 4 pint bottle and add sufficient water to make it measure 32 oz. The next step is to precipi-

tate the quinia, and in order to avoid too great an excess of aqua ammoniæ, it is best to make a preliminary trial of the dilute sulphuric acid and aq. ammoniæ to be employed in the process. Introduce into a graduate 1 fl. oz. of the dilute acid, add some strips of litmus paper, and, while stirring, drop in very gradually from another graduate (or burette) aqua ammoniæ, until the litmus paper turns blue. The amount of aq. ammoniæ used is the quantity necessary to saturate 1 fl. oz. of the acid. Now pour upon the solution in the 4 pint bottle a little more than *double* the amount of aqua ammoniæ, corresponding to the amount of dil. sulphuric acid used, in order to precipitate the quinia; for it is not only necessary to neutralize the amount of acid added, but also the other equivalent already contained in the original sulphate of quinia. Immerse the bottle in ice-cold water to absorb the heat generated during precipitation. Have a sound and tightly fitting cork ready, through which are passed two narrow glass tubes, one of them nearly reaching to the bottom of the 4 pint bottle, the other just penetrating the cork, and both cut off at an even height on the upper side. When the bottle has been sufficiently cooled, pour into it 15 fl. oz. of stronger ether and shake; the quinia will be dissolved, and the contents of the bottle will arrange themselves in two transparent layers, the lower one, an aqueous solution of sulphate of ammonia (holding a little ether, and also a trace of quinia in solution) and the upper one, an ethereal solution of quinia. Introduce the cork into the mouth of the bottle, keeping the finger on the orifices of the glass tubes, and invert the bottle. Hold it for a short time in a somewhat inclined position, to allow the watery solution adhering to the sides and bottom to drain down into the lower layer; then remove the finger and allow the lower layer to flow off into a vessel placed below. As soon as the line of demarkation approaches the cork, allow the liquid to pass only very gradually, and as soon as all the aqueous solution has run off, receive the ethereal solution in a 16 oz. graduate. Rinse the bottle with  $\frac{1}{2}$  fl. oz. of ether and add it to the former. Allow the ethereal solution to evaporate in a warm place (110—120° F.) until reduced to  $2\frac{1}{2}$  fl. oz. Remove it, cover it well, to prevent further evaporation, and cool it to the temperature of 60° F. Then measure off into a weighed graduated tube (or minim graduate) 5 minims and evaporate to dryness. Should there be no scales sufficiently accurate to indicate fractions of a grain, use an aliquot multiple of 5 minims, f. i. 50 minims, in which case, of course, you will have to divide after-

wards again by 10. There will probably be found more than 1 grain of quinia contained in the 5 minims; hence it is now only necessary to dilute it with ether to the required strength. Let us suppose that the residue of 5 minims weighed  $1\frac{1}{4}$  grains, and that our remaining solution measures  $2\frac{1}{2}$  fl. oz.; now in order to make the solution contain 1 grain in every 5 minims, we have the proportion:

$1$  (grain req.) :  $1\frac{1}{4}$  (grains found) =  $2\frac{1}{2}$  (fl. oz.) :  $x$  (fl. oz. req.)  
whence  $x = 3\frac{1}{8}$  (fl. oz.); hence we have to dilute the solution with stronger ether so as to measure  $3\frac{1}{8}$  fl. oz.

The original amount of sulphate of quinia (364 grs.) employed, contains 40 grs. of sulphuric acid, and 324 grs. of quinia;\* now if all the latter were to remain in solution, we should obtain (at the rate of 1 grain in 5 minims) 1620 minims or 3 oz. 180 min.; but during the evaporation a portion of the quinia has attached itself to the sides of the vessels; and this should not be scraped into the solution, since it will not only fail to redissolve, but will generally produce a further separation of quinia.

It will sometimes occur, that on pouring the ether upon the precipitated quinia in the bottle, the latter absolutely (or nearly so) refuses to dissolve; this is owing to the presence of undecomposed solution of bi-sulphate of quinia, which seems to prevent the solvent action of ether. By adding a little more ammonia and shaking, the solution will at once take place. But too much ammonia must be avoided, since this gives a tendency to the ethereal solution to deposit the quinia in a short time; at least such is my experience.

The quinia adhering to the sides of the evaporating vessel, may be dissolved off by the aid of a little dil. sulphuric acid, and kept in solution for future use; its amount may be determined by drying and weighing the graduate together with the crust of quinia, and reweighing it after its removal. Supposing the former weight is 1020 grains, the latter 1000 grains, the difference will be the quinia, 20 grs. Now as

\*The author's calculations are slightly incorrect; crystallized sulphate of quinia must be heated to between 110 and 120° C. (230 and 248° F.) to lose all its water of crystallization, when it still retains 1HO of constitution, its formula being  $C_{40}H_{24}N_2O_4.HO.SO_3$  and its equivalent weight 373, containing 324 dry quinia and 49HO,  $SO_3$ . See Am. Journ. Ph., 1855, p. 243. 364 grains sulphate of quinia, deprived of all its water of crystallization, contain, therefore, 316 grains dry quinia.—EDITOR AM. JOURN. PH.

324 (equiv. of quin.) : 364 (equiv. of sulph. qu.) = 20 :  $x$   
 $x = 22\frac{3}{8}$  or about  $22\frac{1}{2}$  grains of sulphate of quinia.

The ethereal solution prepared according to the above directions must be kept in well stoppered bottles, and should not be long exposed to light. I have kept some samples unaltered for over one year.

*Bellevue Hospital, June 12, 1871.*

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NOTE ON SOME PILL MASSES.

BY JOHN M. MAISCH.

A combination of protosulphate of iron and carbonate of potassa in the form of pills or boluses is used to some extent in Europe in cases of chlorosis, amenorrhœa, &c. The combination is similar to that of Griffith's iron mixture, and of *pilulæ ferri compositæ*, except that the latter preparation contains carbonate of soda, a nondeliquescent salt, and myrrh, to which protective properties for the proto-carbonate of iron are ascribed. To avoid the hygroscopic tendency of the carbonate of potassa, Guibourt had suggested its substitution by the bicarbonate; but the difficulty of forming a proper pill mass is thereby not obviated. To accomplish this result, absorbent vegetable powders like *pulv. althææ*, *rad. glycyrrh.*, &c., have been recommended in connection with gum Arabic or tragacanth. The latter alone may be used with advantage in the form of a thick mucilage. In a communication to the *Pharmac. Zeitung*, it is suggested to substitute for the iron sulphate the exsiccated salt in an equivalent quantity, and after triturating it with the potassa salt to beat it, with honey, into a mass of very good consistence. The slower solubility of the exsiccated iron salt must necessarily render such pills slower in their effects, but probably not sufficiently so to be objectionable. I have obtained excellent results by manipulating as follows: Sulphate of iron, granulated by precipitation of its solution with alcohol, is rubbed together with the carbonate of potassa; the mixture becomes soft and changes in color, in consequence of the formation of carbonate of iron and the liberation of water of crystallization. Powdered tragacanth is now added, and by beating with a few drops of syrup a very good pill mass is obtained. The proportions may be seen from the following:

R. Ferri sulphat. pur., Potassæ carbonat. pur., *aa* 3ij; Pulv. tragacanthæ, 3ss; Syrupi simplic, gtt. v—vi. M. ft. pilul. No. 60.



Sulphate of iron always gives more or less trouble in the formation of pill masses with the usual excipients. In many cases a little glycerin will probably be found superior to any other, as is the case with the following prescription, which will give a crumby, unsatisfactory mass with syrup, honey and mucilage, but is unobjectionable when glycerin is employed:

R. Ext. nucis vom., gr. x; Ferri sulphat., gr. xx; Quiniæ sulphat., ʒij; Glycerin, gtt. v—vi. M. ft. pilul., No. 20.

It is remarkable what a large amount of the other excipients the above mixture will take up, while five or six drops of glycerin will have a by far better result.

#### GLEANINGS FROM THE GERMAN JOURNALS.

By J. M. MAISCH.

*Curcumin* has been obtained by F. W. Daube in deep yellow crystals, of a pearly to diamond-like lustre. Turmeric is completely exhausted with hot water and, after drying, treated with boiling benzole, which, on cooling, separates crude curcumin. This is dissolved in cold alcohol, the filtrate precipitated by acetate of lead, and the liberated acetic acid almost neutralized by subacetate of lead; the precipitate is decomposed under water by a current of sulphuretted hydrogen, the sulphide of lead exhausted with boiling alcohol, and the alcoholic solution slowly evaporated. Curcumin is readily soluble in alcohol and ether, but requires 2600 parts of benzole for solution, which menstruum does not dissolve the resins, from which curcumin is otherwise difficult to liberate.—*Zeitschr. f. Chem. Jan. 21, 1871*, from *Ber. d. d. Chem. Gesellsch. Berlin*, 1870, 609.

*Opium Wax*.—The glaucous coating of the ripening poppy capsule is wax, which, being scraped off with the hardening milk juice, is likewise a constituent of opium. O. Hesse has prepared it from the residue left on exhausting opium with water. The mass was first treated with some hydrate of lime, and then exhausted with boiling alcohol. The white crystals, after having been recrystallized, are treated with boiling chloroform, which leaves colorless crystals probably related to lactucerin and hyoscerin. From the chloroform solu-

tion the pure wax is obtained as cerotate and palmitate of ceryl, by fractional crystallization.—*Ibid.*, from *Ibid.* p. 637.

*To Prevent Mucilage from Mouldiness.*—Instead of carbolic acid, corrosive sublimate, &c., the Polyt. Notizbl. recommends to add a minute quantity of sulphate of quinia, and suggests that it might also be useful for ink.—*Ph. Cent. Halle*, 1871, 182.

*Subnitrate of Bismuth.*—Dr. Biermann has found some of the commercial articles to contain notable quantities of ammonia.—*Archiv d. Ph.* 1871, April 6.

*Inuloid* is, according to O. Popp, contained in the tubers of dahlia and helianthus at a time when the deposition of inulin in the cells has but just commenced. It is obtained from the juice by precipitating gum, coloring matter, &c., by subacetate of lead. The filtrate, after standing for several hours, again produces a precipitate, more of which may be obtained on concentrating the liquid. The white amorphous substance shows nearly the same physical and chemical behavior as inulin, but differs in being lighter and more soluble in water. Its ultimate composition being that of inulin, the author regards it as a soluble modification of this principle.—*Archiv d. Ph.* 1871, April, 40—46.

*Impure Black Sulphuret of Antimony.*—Dr. R. Mirus calls attention to the commercial powder of black antimony, which always contains powdered quartz, sometimes 30 to 40 per cent. The latter is usually not removed by smelting the ore previous to powdering it.—*Ibid.*, 4—6.

*Preservation of Ergot.*—A. Hirschberg recommends to select unbroken grains only, and, after drying them carefully at a moderate heat, to preserve them in small well-sealed vessels, previously dried. When desirable to keep on hand some bruised and powdered ergot, the same precautions are recommended. The absorption of moisture and contact with the air induce changes, and the slightest odor of propylamin is a sure sign that decomposition has commenced.—*Ibid.*, 88, 89.

# FORMULARY OF ELIXIRS AND OTHER PREPARATIONS OF THE NEWARK PHARMACEUTICAL ASSOCIATION.

## WINE OF BEEF AND IRON.

R.

Extracti Carnis (Liebig's)..... 1 oz.  
Ferri Citrat.....96 grs.  
Vini Xerici..... 16 oz.  
Syrupi..... 2 oz.  
Pimentæ (contus).....  $\frac{1}{2}$  dr.  
Aque..... q. s. ft. 24 oz.

Dissolve the Extract Beef in 4 oz of water and add the Allspice; after standing 10 hours add the Wine and Syrup, then the Citrate of Iron previously dissolved in 2 oz water; filter.

Each fluidounce contains: Fresh Beef, 1 oz; Citrate Iron, 4 grs. Dose —one tablespoonful.

## NUTRITIVE WINE.

Prepared same as above, omitting the Citrate of Iron.

## ELIXIR CALISAYÆ.

R.

Cort. Cinchonæ flav.....  $\frac{1}{2}$  oz.  
" " (Calisaya).....  $\frac{1}{2}$  oz.  
" Aurantii.....  $\frac{1}{2}$  oz.  
Sem. Coriand..... 2 drs.  
Cocci Cacti..... 1 dr.  
Spts. Vini Deod. ....12 oz.  
Aque.....10 oz.  
Glycerinæ ..... 5 oz.  
Syrupi..... 5 oz.

Reduce the Barks &c. to a moderately fine powder, and pack firmly in a percolator; mix the deodorized Spts. water, Glycerin and Syrup, adding enough water to make two pints of percolate, to which add 20 grains powdered Tartaric Acid, and after standing 24 hours, filter.

Each fluidounce contains 16 grains Cinchona Bark.

## ELIXIR PYROPHOS. IRON AND QUINIA.

R.

Ferri Pyrophos.....160 grs.  
Quiniæ Sulph.....10 grs.  
Spts. Vini Deod.....  $2\frac{1}{2}$  oz.

Syrupi..... 3 oz.  
Aque.....  $9\frac{1}{2}$  oz.  
" Flor. Auranti..... 5 oz.  
Acid. Sulph. dil..... q. s.

Dissolve the Pyrophosphate Iron in the water and add the Syrup, then dissolve the Quinine in the Orange Flower Water with as little diluted Sulph. Acid as possible, and gradually mix them; filter.

Each fluidounce contains: Pyrophos. Iron, 8 grains; Sulph. Quinia,  $\frac{1}{2}$  grain.

## ELIXIR QUINIA, IRON AND BISMUTH.

R.

Elix. Ferri Pyrophos. et Quiniæ, 16 oz.  
Bismuthi et Ammon. Citratis, 128 grs.  
Dissolve.

Each fluidounce contains: 8 grs. Pyrophos. Iron; 8 grains Citrate Bismuth;  $\frac{1}{2}$  grain Quinia.

## ELIXIR PYROPHOS. IRON, QUINIA AND STRYCHNIA.

R.

Elix. Ferri Pyrophos. et Quiniæ, 16 oz.  
Strychniæ..... 1 gr.

Dissolve.

Each fluidounce contains: Pyrophos. Iron, 8 grains; Quinia,  $\frac{1}{2}$  gr.; Strychnia, 1-16th grain.

## WINE OF PEPSIN.

R.

Pepsin (Hawley's).....160 grs.  
Vini Xerici.....16 oz.  
Acid. Mur. Dil..... 1 dr.

Triturate the Pepsin with 4 oz. of Wine mixed with acid. Pour this on a filter and pass the balance of the Wine through it.

Each fluidounce contains Hawley's Pepsin 10 grs.

## ELIXIR AROMATIC.

R.

Cort. Aurantii..... 4 drs.

Sem. Coriand..... 2 drs.  
" Angelicæ..... 2½ drs.  
Cocci Cacti..... 1 dr.  
Spts. Vini Deod..... 12 oz.  
Aque..... 10 oz.  
Glycerinæ..... 5 oz.  
Syrupi..... 5 oz.

Percolate 2 pints.

A pleasant vehicle for administering nauseous remedies.

ELIXIR VALER-AMMONIA.

R.

Ammoniaë Valerianat..... 96 grs.  
Fl. Ext. Vanil.,  
Tr. Cardam. Comp., a a .... ½ oz.  
" Xanthoxyl..... 2 drs.  
Syr. Aurantii Cort..... 6 drs.  
Aque..... 4 oz.

Dissolve the Valerianate of Ammonia in the water and add the other ingredients, previously mixed.

Two grains Val. Ammonia to each drachm.

COMP. SYRUP OF HYPOPHOSPHITES AND IRON.

R.

Hypophos. Sodæ,  
" Calcis,  
" Potassæ, a a ..... 256 grs.  
" Ferri ..... 126 grs.  
Aque ..... 12 oz.  
Sacch. Alb..... 18 oz.

Dissolve the Hypophosphites in the water in a water-bath and filter. Add sufficient water to make up for the evaporation. Add sugar and apply gentle heat to make syrup, 21 oz.

Each fluidounce contains: Hypophosphite of Soda, Lime and Potass. 12 grs. each; Hypophos. Iron 6 grs.

COMP. SYRUP OF HYPOPHOSPHITES.  
Same as above, omitting the Iron.

CHEMICAL FOOD.

Parrish's Formula, omitting Cochineal and Muriatic Acid. See U. S. D.

Each teaspoonful contains 1 grain Phosphate of Iron, 2½ grains of Lime and the other Alkaline Phosphates.

ELIXIR PEPSIN, BISMUTH AND STRYCHNIA.

R.

Pepsin (Hawley's)..... 256 grs.  
Bismuth. Citrat..... 64 grs.  
Strychniæ..... 1 gr.  
Aq. Flor. Auranti..... 6 oz.  
Spirit. Vini Deod..... 2 oz.  
Aque ..... 4 oz.  
Glycerinæ (pure)..... 2 oz.  
Syrupi..... 2 oz.

Triturate the Pepsin with the water and Glycerin and filter; dissolve the Bismuth in 2 oz. orange flower water with a few drops of Aqua Ammoniaë. Dissolve the Strychnia with a few drops of Acetic Acid. Add the Bismuth solution to the Pepsin, then the balance of the fluids, and finally the solution of Strychnia.

Each fluidounce contains: Pepsin 16 grains; Citrate Bismuth, 4 grains; Strychnia 1-16th grains.

FERRO-PHOS. ELIXIR GENTIAN.

R.

Cort. Auranti .. ..... 1 oz.  
Sem. Coriand..... 1 dr.  
Macidis..... 1 dr.  
Rad. Gentian..... 1 oz.  
Spts. Vini Deod..... 4 oz.  
Aque..... 4 oz.  
" Flor. Auranti..... 2 oz.  
Syrupi..... 6 oz.  
Ferri Pyrophos..... 256 grs.

Reduce the Roots, Seeds, &c. to a moderately fine powder, pack in a percolator, mix the Spirits and Waters, and percolate 10 ounces. Dissolve the Pyrophosphate of Iron; add the syrup and filter.

Each fluidounce represents 16 grs. Pyrophos. of Iron; 30 grains Gentian.

## ON SYNANTHROSE, A NEW CARBOHYDRATE.

By O. POPP.

Some years ago the author observed in the rhizome of *Helianthus tuberosus*, besides glucose, another sugar. He has since found it in the tuberous roots of other *Synanthereæ* (*compositæ*), and prepares it preferably from dahlia tubers, by precipitating the juice with subacetate of lead, removing the excess of lead with sulphuretted hydrogen, neutralizing the free acid with carbonate of magnesia, and evaporating. The residue is repeatedly treated with small quantities of alcohol until the glucose is removed, that is, until the solution ceases to have any effect upon polarized light. The undissolved portion has a brownish yellow color, and contains inulin. It is treated with small quantities of alcohol, so as to obtain a concentrated solution of the new sugar. The solution is decolorized by animal charcoal, and poured into absolute alcohol mixed with ether. The white amorphous mass is dried *in vacuo* over sulphuric acid. Synanthrose is deliquescent, readily soluble in water and dilute alcohol, insoluble in ether. Insipid in taste, and without action upon polarized light, it is decomposed by dilute acids into dextrose and lævulose, has then a sweet taste, and is now directly fermentable. It is colored black by concentrated sulphuric acid in the cold, but not turned brown by caustic potassa at ordinary temperature. Nitrate of silver produces in the cold a white flocculent precipitate; on heating, reduction takes place. Mercurous salts are reduced in the cold; the compounds with lime and baryta are soluble in water, but insoluble in alcohol. Subjected to dry distillation, carbonic acid, carbonic oxide and marshgas are obtained, besides an aqueous distillate containing acetic acid and acetone.

After repeated precipitation by alcohol and ether, and drying *in vacuo*, as above, its elementary analysis gave results corresponding with the formula  $C_{12}H_{22}O_{11}$ .\* The baryta compound has the formula  $C_{12}H_{20}BaO_{11}$ . Alcoholic solutions of subacetate of lead and synanthrose produce an amorphous precipitate  $= C_{12}H_{20}Pb_2O_{11}$ , which is soluble in dilute acetic acid and in the lead solution.

Synanthrose prevents the precipitation of cupric, ferric and chromic oxides by alkalies. Freshly precipitated ferric oxide is dissolved by a solution of synanthrose; on evaporation, ferrous oxide is formed

\* C=12, O=16.



and glucose. Treated with chromic acid or binoxide of lead, synanthrose yields formic acid. Saccharic and oxalic acids are produced by the action of dilute nitric acid. With a mixture of 1 p. nitric and 2 or  $2\frac{1}{2}$  sulphuric acid, nitrosynanthrose is obtained, which is explosive.

Heated to  $140^{\circ}$  or  $145^{\circ}$  C., synanthrose turns brown, gas is evolved, and a little caramel formed, besides dextrogyric glucose and lævulosan, which is left behind after the fermentation of the glucose, and appears to be optically inactive.

Synanthrose was found by the author in the tubers of *Compositæ* at all seasons, though in variable quantities according to the age, so that they are richest in it when fully developed.

The new sugar is in many respects closely allied to ordinary cane sugar.—*Archiv d. Pharm.*, 1871, April, 31—39.

#### PARCHMENT PAPER AS A FILTERING MEDIUM.

BY CHARLES R. C. TICHBORNE, F. C. S., ETC.

The Bunsen filter is now well known and familiar to most manipulators. It merely consists of a funnel and filter connected with an air-tight vessel, in the interior of which a partial vacuum can be produced, either by a Sprengel or ordinary air pump; in fact, by any contrivance by which a downward pressure of some considerable power is exerted upon the fluid washing some precipitate, or upon a liquid it is desirable to filter quickly.

To give us the opportunity of doing this properly, it is necessary to have a nicely prepared support beneath the nozzle of the filter, to enable it to bear the considerable pressure to which it is exposed; the nozzle of the filter being the point of weakness. This is generally done by very carefully forming a little cone of platinum foil, which must exactly fit the bend of the funnel. If the fit is not perfect, it generally results in the breaking of the filter and the failure of the experiment. This is at once obviated, and the platinum nozzle dispensed with, by using parchment paper as a filter. Parchment paper bears, under such circumstances, any reasonable pressure; and yet it is a perfect filtering medium. As regards the strength, Dr. Hofmann says that it becomes five times as strong as the paper before it is parchmented; and I think that, when speaking of moist bibulous paper, it is no exaggeration to say its strength is increased at least twenty times.

In making the parchment paper for this purpose, the following method should be adopted. It differs very little from the ordinary one, except as regards a few precautions:—I use one part of pure sulphuric acid and one-half part of distilled water well mixed in a dish or shallow vessel. Where practical, this mixture should be ice cold, and under no circumstances must it be used while it is warm. Pieces of Swedish filtering-paper should then be dexterously floated upon the acid, so as to bring every particle of the surface in contact with it. But it is not necessary to parchmentize both sides. The next point of importance after the cooling of the acid mixture is the quickness used in the washing, which must be thorough.

This paper, which has proved itself so useful to us for dialytic purposes, forms the most perfect filtering medium, if properly managed, with which I am acquainted. Although, under ordinary circumstances, it is nearly impervious to fluids, they pass through with perfect facility under pressure. The structural change produced by sulphuric acid upon cellulose is the converse of most of the other acids. Thus in paper converted into pyroxyline by the action of nitric acid the fibres are seen, when examined with the microscope, to be more or less contracted, and the result is a non-contiguous, or friable structure, covered with small holes; but in parchmented paper the fibres are swelled considerably in bulk, and are converted into a colloid or gelatinous substance, which, although slowly pervious to fluids, is very homogeneous in texture, and hence its strength.

In Bunsen's original paper he speaks of the difficulty of preventing filaments of the paper used from becoming mixed with precipitates. "Thus," he says, "another and an inestimable advantage springs from the peculiar condition of a precipitate filtered by this method,—the surface of the filter becomes injured and torn, so that the precipitates becomes mixed with filaments of paper. Gelatinous precipitates (when washed under pressure) adhere to the filter in a thin coherent layer, and may be removed piece after piece so completely that the paper remains perfectly clean and white." Now parchment paper is of that nature that it might be scraped with a knife or brush, without invalidating a quantitative analysis.

Parchment paper would be perfection for filtering by pressure; but, alas! it has one drawback. The practical difficulty is in making the filter lie close to the funnel, so as not to permit atmospheric air to pass down by the side, instead of exerting its pressure upon the

surface of the liquid in the filter. This difficulty is removed by placing an inner filter of ordinary filtering paper larger than the parchment paper one; therefore, the latter should be thin, and only treated with acid on one side. It is from this reason that parchment paper may be used more advantageously in a Bunsen filtering apparatus made on the principle of a percolator—the bottoms of the upper vessel being covered with good strong paper, strengthened with muslin; such an apparatus as this is applicable to many purposes, such as quick and thorough exhaustion of a powder by any menstruum, or the separation of crystals from a viscid liquid.—*Pharm. Journ. and Trans.*, May, 6th, 1870.

#### THE OCHRO AND THE MUSK MALLOW

BY JOHN R. JACKSON, A.L.S.

Curator of Museums, Royal Gardens, Kew.

Perhaps there is no one family of plants having so many species, with such a decided characteristic property running through the whole, as the *Malvaceæ*. Almost all are mucilaginous, and though none of them are officinal in this country, the marsh mallow (*Althæa officinalis*, L.) and the common mallow (*Malva sylvestris*, L.) are sometimes used by the peasantry in rural districts, a decoction of the leaves of the first being applied for fomentations, and the mucilage with which both this and the common mallow abound being employed as a soothing or softening drink in coughs and bronchial affections. It is, however, chiefly in France that the roots are used to produce a demulcent drink known there as Guimauve.

In tropical or temperate regions, where the species of this Order are found most abundantly, the mucilage and seeds of the several species are used by the natives for various medicinal purposes. Two of the most interesting plants are the ochro (*Hibiscus esculentus*, L.) and the musk mallow (*H. Abelmoschus*, L.) the first interesting on account of its esculent and medicinal properties and uses, and the second principally on account of its seeds being used, to a certain extent, as a substitute for animal musk.

The Ochro, or edible hibiscus, is an annual herbaceous plant, with hairy stems and alternate cordate leaves strongly toothed, and from three to five-lobed. The petals are pale yellow, with a deep crimson base. The capsules or fruits appear to vary much in size according

to the country where they are produced. Those we have seen from the East Indies are usually from four to six inches in length and about one inch in diameter at the base, tapering upwards to the apex, while those grown in Venezuela and some other parts of South America, as well as those from South Africa, are not more than two or two and a half inches long and one and a half inches diameter across the centre. They are marked with from five to eight ridges, running longitudinally from the base upwards and corresponding with the number of cells, each ridge forming a valve and partially dehiscent when the fruit is ripe and dry; the small round seeds also becoming loose and shaking in the capsule like a rattle. The plant is a native of the West Indies, but is cultivated extensively in all tropical countries, as well as in the south of France, principally for the sake of its fruit. This is gathered before it is fully ripe and is used as a vegetable, but chiefly for imparting a mucilaginous thickening to soups; it is also used when very young for pickling, like capers. The plant is officinal in India, being considered a valuable emollient and demulcent; the capsules are employed in a decoction. and the Indian Pharmacopœia gives the following instructions for its preparation:—

“Take of the fresh immature capsules, sliced transversely, three ounces; water, a pint and a half. Boil to a pint and strain; sweeten to taste.

“Dose.—From three to six ounces, or *ad libitum*, as an ordinary drink.”

The inhalation of the vapor of the hot decoction has been found very serviceable in allaying cough, hoarseness, irritation of the glottis and other affections of the throat and fauces. The dried capsules may be employed when they are not procurable in a fresh state.

According to the testimony of Dr. Gibson and others, the fresh capsules bruised form an efficient emollient poultice.

The seeds are used in native practice in the preparation of a demulcent drink, corresponding to our use of barley, and the leaves are used for poultices.

The musk mallow (*H. Abelsonschus*, L = *Abelsonschus moschatus*, Moench) is also an annual herbaceous plant with irregularly-toothed hastate leaves. The flowers, like those of the former species, are yellow with a crimson base, and are succeeded by an oblong-lanceolate hairy capsule. The plant is a native of the East Indies, but has

become naturalized in the West, and is also cultivated in most tropical countries.

Both in the East and West Indies the bruised seeds are used internally and externally as a supposed remedy for snake bites; they have a very strong musky odor, and possess cordial and stomachic properties, and the Arabs mix them with their coffee to give it a perfume. They are also used by perfumers in this country, chiefly, we believe, in the form of powder for sachets, being imported from the West Indies for this purpose.

Both of the above-named plants abound in a strong silky fibre.—*Pharm. Journ. and Trans. June 3, 1871.*

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SOPHISTICATIONS.

EDITOR PHARMACIST:—Allow the undersigned to call, through your journal, the attention of the professional brethren to some articles which, in the run after the "almighty dollar," have been brought in the market, to impose upon too confiding Pharmacists and upon the public.

The first is "Liebig's Extract of Malt," manufactured by J. M. Hirsh & Co., in this city. Although its label informs that the manufacturers have been awarded a prize medal at the Paris Exposition, the vignette of Louis Napoleon has lost its charm, and cannot make this miserable preparation good, nor shield it from the deserved exposure.

The syrup-like Extract of Malt, in vast preference to the advertised beers of Hoff, Koch, etc., is said to be really valuable as a nutritive food for infants, dyspeptics, and invalids in general, owing to its containing, in a small compass and in an agreeable, palatable form, all the elements of the grain valuable for nutrition, as albumen, sugar, and phosphates.

But how can this comparatively new remedy be successfully introduced for the benefit of the human race, if, instead of being pleasant to the taste and easy to digest, it nauseates the stomach and creates *a priori* by its offensive odor and unpleasant taste,—an aversion and prejudice against it with the patients who take it, as well as with physicians who prescribe it—if, in short (as Micawber says), the extract of malt is not the extract of malt? And this very thing is our charge against Hirsh's preparation of that name. An examination of the



same, upon various complaints of the character mentioned, forced upon us the conclusion that Hirsh's Extract of Malt bears a very distant, if any, relation to barley; that the bulk of it is glycerine, and of such a cheap quality, as ought not to be used in pharmacies,—not even for liniments.

It is difficult, as it generally is with organic bodies, to give an exact test for the purity and general quality of the Extract of Malt, but it may be considered a good criterion if a small quantity, heated and burnt in a platinum or iron spoon, over a spirit lamp, issues, as it turns brown, the agreeable, toast-like odor of roasted grain, followed by that of caramel. In Hirsh's extract, the offensive smell of impure glycerine takes the place of the absent odor of the grain.

It may be necessary or advisable to add to the extract, during the warm season, a small quantity, say one-eighth, of glycerine to prevent fermentation; but it ought to be pure glycerine, and if so, it will not interfere with the palatability or the efficacy of the extract, nor with the criterion mentioned.

If pharmacists would prepare this extract, they would easily overcome all the difficulties of manufacture, and would furnish themselves with a standard preparation to judge by, whenever they find it afterwards more convenient to buy it. The proper formula for making the Extract of Malt having been published by Mr. Albert E. Ebert, in No. 11, Vol. III. of *The Pharmacist*,\* it may be here suggested that the manipulations can be somewhat shortened if the pulpy mass, as soon as all the starch has been converted into dextrine and glucose, is thrown into a percolator of proper size with a layer of gravel at the bottom; only a small quantity of the liquid has to be returned before it runs perfectly clear. So much for Malt Extract.

The second article of fraud is a "Strictly pure Cream of Tartar, ground from the crystals expressly for the drug trade," offered by a man who, for a number of years, has been a dispenser of pure drugs and medicines, which business he abandoned for the sake of manufacturing baking power and the pure cream of tartar. His confiding nature has probably never permitted him to doubt the purity of anything he dispensed, and judging others by himself, he thinks it an easy matter to palm off the product of his manufacture on the profession, there being the strong inducement that he knows exactly what is needed in the drug trade, having been in it himself. This cream of

\* See page 33 of January number of this Journal.

tartar was offered by his agent at less than market price, but being tried with liquor potassæ, it left a sediment of about twenty per cent., which, under effervescence, was readily dissolved by nitric acid, and from that solution precipitated by oxalic acid.

The writer would not have considered this article worth mentioning, trusting in the circumspection of the gentlemen of the profession, if said agent had not exhibited cards of some drug firms who, as he said, had bought from him or promised to buy as soon as they needed any.

Yours respectfully,

C. E. CLACIUS.

*Chicago, April, 1871.*

*—The Pharmacist, May, 1871.*

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#### PHARMACY IN AUSTRIA.

Among the many political and social questions which are discussed in Austria just now, the relation of the pharmacist to the State is not forgotten. There; as in Germany, the pharmaceutical business is strictly under Government control; the number of pharmacies is limited, etc.

Some members of the profession at Vienna—for it is a profession there and not a trade—have lately petitioned their parliament, the Reichsrath, in favor of free trade, and they are strongly opposed by the Austrian United Society of Apothecaries, consisting of more than 500 members from different parts of the empire. They contradict point after point the arguments adduced by the free-traders in a long document, likewise addressed to the parliament.

As to the state of pharmacy generally, they say the Pharmacopœia is the Codex, prescribing what articles are to be kept, and of what quality. Professional inspectors ascertain by personal visits every year the efficiency of the pharmaceutical establishments, and their annual reports are most favorable.

In order to prove that the limitation of the business to a certain number is most conducive to the true interests of the public, they point to those countries in which free trade in pharmacy does exist.

It is stated as a matter of fact, that in all large towns in this country a few only of the many pharmacies enjoy public confidence. In London, it is asserted not more than 20 out of 3000 pharmacists' shops command undoubted confidence; but these 20 establishments are of such an extent as to employ 30 assistants each. The natural

consequence is, that prescriptions are often sent many miles to the distant shop; and of what use, it is asked, are the undeserving 300 or 400 places on the way?

In regard to France, M. Dorvault, Director of the Pharmacie Centrale at Paris, is quoted, who said, "If the pharmacists are allowed to multiply without limitation, and to enter into competition as keen and bitter as in any other trade, a lamentable falling off in these establishments must be the consequence, and many pharmacists will be forced to adopt means they themselves despise to gain a decent living."

Next, the fixed charges in dispensing, regulated by the State, are discussed, and the question is ventilated which system is most advantageous to the public. It appears the principle followed in the scale of prices is as follows:—Drugs, if sold in comparatively large quantities, are charged the wholesale price, with an addition of 25 per cent., and in small quantities with an addition of 50 per cent. Another charge is made for work, bottles, etc., so that the price of a medicine includes four or five items.

To compare the charges in Austria with those made in England and France, the prices as agreed upon by the Manchester pharmacists, and copied in full from this Journal of 17th December last, are given, and also a copy of a tariff from M. Dorvault's work, 'L'Officine.' The result of this comparison is, that the prices are in the proportion of Austria 1, France 2, England 3, or the French charges for medicines are twice as high, the English three times as high as the Austrian.

The explanation for this great difference the petitioners find in the fact that, after all, the dispensing business is fixed within certain limits, and that the number of pharmacies in France and England so vastly exceeds the real demand, that each can get only a small share, and tries to make up by higher prices. But even these high prices are not sufficient to ensure the existence of so many participators, and they are driven to sell all sorts of patent and proprietary articles. On this subject the Austrians wax very warm indeed. They quote words of the celebrated Professor Boudet, spoken at the Pharmaceutical Congress at Paris in 1867:—"You high and mighty patrons of specialism, do not barricade yourselves behind sophisms, which mislead nobody. You have made slaves of your colleagues; you have degraded them to retailers of your patent medicines; you have

deprived them of their self-confidence and of their professional honor; you have sacrificed the good-fellowship of your brethren to your egotistical designs, and you speculate only on the weakness and ignorance of the sick, on the suffering of life, and every one becomes without compassion a victim of your guile. Oh! if your principles were realized; if in the civilized world pharmacy were handed over to freedom as you demand, what a flood of specialities! what international rivalry of miraculous remedies would rush down upon us! how the diploma of pharmacy would be degraded! Yes, I do not shrink from saying so; and if that diploma might be had for the trouble of picking it up, where is the man of honor to be found who would stoop to drag it out of the mire into which it has fallen? And as to the millions you realize by your specialities, keep them for yourselves; I value the honor of my country higher!"

The gist of the petition is embodied in three points, viz. :—

1. The principle of free trade is not applicable to the pharmaceutical business.
2. Free trade in pharmacy is antagonistic to the true interests of the public, and must ruin the profession, hitherto so highly esteemed.
3. The present system of licences is the best both for the public and for the proprietors of pharmacies.

And, finally, the petition complains that the Government has removed the two apothecaries from the sanitary council of the empire at a time when in Russia two members of the Pharmaceutical Society of St. Petersburg have been appointed members of the supreme sanitary council, in order to report on all points connected with their profession.—*Pharm. Journ. and Trans.* April, 29th 1871.

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#### SOLUTION OF SANTONINE.

By JOHN HARLEY, M. D. F. R. C. P., ETC.

The insolubility of this vermifuge impairs its utility. Cold or warm water takes up the merest trace. Chloroform, absolute alcohol, the strongest acetic acid, turpentine, hot olive oil, and hot glycerine, are the only simple fluids that dissolve any appreciable quantity. On cooling, it separates from the oil and glycerine; and the addition of water to the other solvents produces the same result.

It is obvious, therefore, that none of these solvents are adapted for the use of Santonine as a medicinal agent. A wish to determine the

effect of Santonine in parasitic disease of the bladder led me, after a good deal of trouble, to find that I could form a suitable stronger solution than was needed for my purpose by means of carbonate of soda.

I may formularize my results thus :—

R Santonini, in pulvere, gr. xij.

Sodæ bicarbonatis, gr. xx.

Aquæ distillatæ ℥iij.

Put the soda and water into a flask, keep the fluid near the boiling-point, adding, as it disappears, about two grains of the Santonine at a time, until the whole is dissolved. Solution is affected in about half an hour, during which time the water is reduced by boiling to ℥ij. If need be, reduce by boiling to this bulk, when ℥j will contain a full dose—six grains of Santonine. If an alkaline reaction be objectionable, neutralize with acetic acid.

*Characters of the Solution.*—Bright and permanent, strongly alkaline, free from odor, and excepting that of carbonate of soda, of taste. Carefully neutralized with acetic acid, an equally bright and permanent neutral solution is formed. Both the alkaline and neutral solution may be diluted to any extent with either cold or hot water, without impairing the perfection of the solution of the Santonine. Excess of acetic acid, after some hours, and the mineral acids immediately precipitate the whole, or nearly the whole of the Santonine, unchanged and in its original form of colorless, rectangular plates with bevelled edges.

*Use.*—By the process above described we obtain a bland *alkaline solution*, so completely void of irritating qualities that it may be dropped into the eye without causing the least sensation; and a *neutral solution*, for use in those cases in which an alkali would be unsuitable.

Mixed with from one to twenty times its bulk of acrid urine, sp. gr. 1017·5, and containing excess of uric acid, and retained at 100° Fahr. for several hours, not the faintest turbidity is produced, unless in the case of the alkaline solution, and an excess of phosphates in the urine, when a faint cloudiness may occur from the separation of the latter.

This proves that excess of acid urine (uric acid) fails to cause a deposition of Santonine.

As an injection, from ℥ss to ℥j (three to six grains) of either solution



may be mixed with three or four ounces of warm water, and passed into the bladder or rectum.

I have already shown that absorption is readily affected by the mucous membrane of the bladder;\* and therefore general as well as topical effects may be expected when Santonine is introduced by this channel.

In cases where powders are objected to, a pleasant mixture may be made by adding a little syrup and flavoring water to the Santonine solution.—*The Pharmacist, April, 1871, from London Practitioner.*

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#### PREPARATION OF CHLORATE OF BARIUM.

BY C. WIDEMANN.

Heat for half an hour in a water bath the following mixtures:

One molecule of crystallized commercial sulphate alumina  $\text{Al}^2(\text{SO}^4)^3 + 18\text{H}^2\text{O}$ .

One molecule sulphuric acid.

Two molecules chlorate of potassa.

The whole dissolved into a thin paste by the addition of a sufficient quantity of distilled water. The following reaction takes place:

$\text{Al}^2(\text{SO}^4)^3 + \text{H}^2\text{SO}^4 + 2\text{KClO}^3 = \text{Al}^2(\text{SO}^4)^3 + \text{K}^2\text{SO}^4 + 2\text{HClO}^3$ , or alum and chloric acid.

After cooling, the alum crystallizes. To the cold mass add three or four times its volume of alcohol, then filter and neutralize the filtered liquor by the addition of baryta water, thus forming chlorate and sulphate of barium, also separating a little alumina; the largest amount of alcohol is expelled. The liquor is then refiltered to separate the chlorate in solution, and then the filtered liquid is evaporated to crystallization.

It is necessary, in order to obtain a very pure chlorate, that the sulphate of alumina and the sulphuric acid be used a little in excess.—*Journ. of Applied Chem., June, 1871.*

\* See my last communication to the Medio-Chirurgical Society on the Endemic Hæmaturia of the southeast coast of Africa.

## Varieties.

*The Importation of Preserved Meat into England.*—An interesting return has just been issued from the statistical department of the Board of Trade, giving the importation of preserved meat into this country for the last five years, which shows the enormous extent to which this branch of commerce has been developed, and the rapidly increasing proportions which it has assumed. As might be expected, Australia figures in the list as the largest exporter, and some indication of the startling rapidity which has distinguished the progress of the preserved meat trade between that country and England will be gleaned from the fact that in the year 1866, the exports from Australia to the United Kingdom were only 91 cwts.; in 1867, 6,721 cwts.; in 1868, 16,337 cwts.; in 1869, 28,306 cwts.; and in 1870, 72,812 cwts., which shows that in a period of only five years this trade has risen from comparatively nothing to a very important and considerable amount. This is also forcibly evidenced by the fact that the importations of the meat from Australia in 1866 were valued at £321, while in 1870 they are valued at £203,874—assuredly a sufficiently striking augmentation.

No other countries export preserved meat to an extent at all approximating to Australia. This will be seen from the statistics, which show that the total importation of meat from all countries amounted in 1870 to 80,636 cwts., of which 72,812 cwts. came from Australia, thus leaving only about 8,000 cwts. as the imports from all other countries. Next to Australia, Belgium figures in the list as the largest exporter, 3,299 cwts. of the meat having arrived in England from that country during 1870. In the same year, also, 1,105 cwts. were received from the United States, although in the preceding four years America did not send us any of the meat. Other countries which export this article in moderately small amounts are: British India, 837 cwts.; Uruguay, 693 cwts.; Norway, 678 cwts.; and France, 671 cwts. In the year 1867, Italy exported this meat to England in considerable quantities; but latterly this branch of their exportation appears to have been entirely abandoned.—*Journ. of Applied Chem.* June, 1871, from *London Grocer*.

*Young's Patent Poison Cabinet.*—M. J. C. Young, of Warrington, has constructed a poison cabinet, which it is claimed will render difficult the occurrence of mistakes in dispensing. It consists of a certain number of shelves to accommodate a given number of bottles, which are not of uniform size. Each bottle, correctly labelled, is made to fit a certain space upon the shelf, on the front edge of which the name is painted corresponding with the label upon the bottle. Under each shelf is a movable indicator, which, if pushed along until it rests under a name, allows the corresponding bottle only, and no other, to be removed or replaced. This arrangement requires the intelligent reading of the label twice, thus calling the dispenser's attention to the nature of the substance which he is about to use.—*Pharm. Journ. and Transact.*, April 29, 1871, p. 870.

*Poisoning by Sulphate of Atropia.*—By mistaking two vials, and without

reading the directions, a lady had swallowed about two-thirds of a grain of sulphate of atropia. About twenty minutes afterwards, medical aid was at hand. Doctors Christopher Johnston and George Reuling succeeded in saving the patient through the evacuation of the stomach by means of the pump, and through the hypodermical injection of forty minims of Magendie's solution. Subsequently fearing, from the symptoms, narcotism by the morphia, a solution of caffen and strong hot coffee was injected, and the battery applied. In 18 hours the patient was out of danger, and in 23 hours she merely felt a "little uncomfortable."—*Balt. Medic. Journ. and Bull.*, April, 1871, p. 216—219.

*Coating of Copper and Brass with Zinc in the Humid Way.*—Zinc is finely granulated, by pouring the fused metal into a hot iron mortar and trituration it rapidly with the pestle until it has congealed. Prof. Böttger heats a concentrated solution of sal ammoniac, in a suitable non-metallic vessel, to the boiling point, together with the finely granulated zinc. Into this bath the articles are introduced after their surface has been cleaned with dilute muriatic acid. A brilliant and lasting coating of zinc is deposited upon them in a few minutes.—*Arch. d. Ph.*, from *Wick's Gew. Zeit.* No. 25, 1870.

*Appointments.*—Dr. D. Hayes Agnew has been elected to the chair of Principles and Practice of Surgery in the University of Pennsylvania, made vacant by the resignation of Prof. H. H. Smith.

Prof. Alfred Stillé, M.D. of the same University, has been appointed a member of the Board of Health of this city.

Dr. Victor Merz has been appointed Professor of Chemistry and Director of the Chemical Laboratory at the University of Zurich, Switzerland, and Dr. W. Weith, Professor of Pharmaceutical and Analytical Chemistry.

*Female Apothecary.*—The "Ostseezeitung" states that recently, before the government examiners, a lady passed the examination as apothecary, and acquitted herself so well that she received the censure "excellent." It is the Deaconess Phillipina Mangelsdorff who was thus recognized as the first female apothecary in the Province of Pommerania, Prussia.

*Influence which Coffee and Cacao exert as Food.*—Dr. Rabuteau.—This paper contains the account of some experiments made with dogs, to which the author gave diets in one case consisting daily of 20 grms. of bread, 10 grms. of fresh butter, and 10 grms. of sugar; in the other case, 20 grms. of cacao, 10 grms. of sugar and an infusion of 20 grms. of well roasted coffee. From these experiments the author draws conclusions leading him to consider coffee and cacao as simply preventing de-nutrition. This view was objected to at the meeting by MM. Payen, Dumas, and Chevreul. whose lengthy discussions on this subject are reproduced. As regards cacao (commonly, but erroneously, in this country named cocoa), there can be no doubt that, containing as it does from 17 to 20 per cent of albuminous matter, with from 10 to 12 per cent of starch, from 40 to 50 per cent of fat, and among its mineral matter phosphates, it is food. M. Chevreul, very properly observes, among other matters, the existence of idiosyncrasy and its influence on the individual tastes, and hence also more or less on the action of various alimentary substances, pointing out that he himself

has, from his earliest years, an invincible repugnance against wine, milk, fish, and various vegetables, none of which he ever partakes of, but for all that it would, of course, be absurd to deny the nutritive properties and value of these substances,—*Chem. News. March 31st, 1871.*

*The After-taste of Quinine.*—In practice there is often experienced a great difficulty in getting patients to take quinine, because of its after-taste, which to some is simply unbearable, and when antipathy thus exists, combined with a difficulty in swallowing pills, the therapeutic value of an important drug is lost. We find, and the fact may not be generally known, that the mastication of some acid fruit, as an apple or a pear, will permanently remove the disagreeable after-taste of quinine. The first mouthful of food should be well masticated and rolled through the mouth, so as to cleanse the teeth, etc., and then ejected. The second morsel may be swallowed, when it will be discovered that all taste of the quinine will be removed.—*Boston Med. and Surg. Journal, June 8th, 1871, from Med. Press and Circular.*

*Styptic Wool.*—The following is quoted from the *Lancet* by the *American Journal of Dental Science*:

Dr. EHRLICH, of Isny, makes known a very simple preparation of wool that he has found very serviceable in arresting hemorrhage after operations or from wounds. To prepare it he boils the finest carded wool for half an hour or an hour in a solution containing four per cent. of soda, then thoroughly washes it out in cool spring water, wrings it and dries it. The wool is thus effectually purified, and is now capable of imbibing fluids uniformly. It is then to be dipped two or three times in fluid chloride of iron diluted with one third of water, expressed and dried in a draught of air, but not in the sun or with high heat; finally it is carded out. Thus prepared it is of a beautiful yellow color, and feels like ordinary dry cotton wool. As it is highly hygroscopic, it must be kept dry, and when required to be transported must be packed in caoutchouc, or bladder. Charpie may be prepared in a similar manner, but on account of its coarse texture is not so effective as cotton wool, presenting a less surface for coagulation. When the wool is placed on a bleeding wound, it induces moderate contraction of the tissue, coagulation of the blood that has escaped, and subsequently coagulation of the blood that is contained within the injured vessels, and this arrests the hemorrhage. The coagulating power of the chloride of iron is clearly exalted by the extension of its surface that is in this way affected. The application of the prepared wool is not particularly painful, whilst, by sucking up the superfluous discharge and preventing its decomposition, it seems to operate favorably on the progress of the wound. The unpleasant secondary results that have led many practical surgeons to discard the use of the perchloride of iron do not occur with the wool when it is properly made and applied. In case of wounds where the bleeding proceeds from large and deep seated vessels, it may be used as a compress, a bandage being applied over it, or the wound may be plugged with it. It may also be employed with advantage in cases of profuse suppuration, to imbibe the discharge and purify the surface. He recommends that a small portion should be given to every soldier on going into action.—*Med. and Surg. Journal.*

**AMERICAN PHARMACEUTICAL ASSOCIATION.**  
**NOTICE.**

The Nineteenth Annual Meeting of the American Pharmaceutical Association will be held in the city of St. Louis, Missouri, on the second Tuesday (12th) of September, 1871, commencing at 3 o'clock P.M.

With the view of increasing the interest and importance of this meeting the Committee of Local Arrangements will endeavor to make the display of products in any way connected with the drug business as extensive as possible.

Specimens of crude drugs, especially such as are indigenous to the West and South, will serve to illustrate the materia medica of the great Valley of the Mississippi, and are particularly desirable articles for exhibition; they should be delivered, free of expense, to Wm. H. Crawford, Local Secretary, St. Louis, accompanied by an invoice and description.

It is earnestly hoped that all who are eligible and who are not already members will become such, and thus more nearly equalize the representative number of members among all the States, which would greatly increase the usefulness of the Association, and render it more national in character.

R. H. STABLER, M. D., *President.*

*Alexandria, Va., June 13, 1871.*

**Minutes of the Philadelphia College of Pharmacy.**

A stated meeting of the Philadelphia College of Pharmacy was held at the College building June 26, 1871. Dillwyn Parrish, President, in the chair. 19 members present.

The minutes of last meeting were read and approved. The minutes of the Board of Trustees were read by the Secretary of the College.

The following report was read from the Publishing Committee:

The Publishing Committee respectfully report the estimated expenses of the Committee for the remaining 6 mos. of the year about \$2,000.

The amount estimated as collectable this year by the Business Editor the Committee think considerably in excess of what will be realized, and, in the uncertainty of collecting accounts which are not promptly settled, and the necessity for paying cash for the paper and printing of the Journal, and monthly settlement of salaries of Editor and Business Editor, induce the Committee to believe that the interest of the College would be best served by making no transfer of money in the hands of the Committee to the Sinking Fund before the annual meeting of the College in March next.

WILLIAM PROCTER, JR.,

CHAS. BULLOCK,

THOS. S. WIEGAND.

*Philadelphia, June 26, 1871.*

On motion of James T. Shinn, the Treasurer of the Committee on Latin Labels was directed to pay to the Committee on the Sinking Fund the balance



of cash in the hands of their Treasurer, agreeably to his report in March last.

The following preamble and resolution, offered by William Procter, Jr., was read and adopted:

WHEREAS, at the close of the annual meeting, just as the election was being entered upon, Charles Ellis declined re-election as a member of the Committee of Publication, on which he had served near forty years, nearly the whole time acting as Treasurer; therefore

*Resolved*, That the Philadelphia College of Pharmacy, appreciating the long and disinterested services of Charles Ellis as a member of the Committee of Publication, and desiring to express their sense of his faithfulness, in this public manner, hereby tender him a vote of thanks, and direct its publication in the Journal.

The appointment of delegates to the coming session of the American Pharmaceutical Association being in order, a ballot was ordered. Messrs. W. J. Jenks and T. S. Wiegand, acting as tellers, reported the election of Prof. Jno. M. Maisch, Thomas S. Wiegand, Jos. P. Remington, Charles Bullock, William Procter, Jr.

On motion of Dr. Robert Bridges, the Committee was empowered to fill vacancies occurring from inability of any member to attend the meeting of the Association.

On motion, then adjourned.

CHAS. BULLOCK, *Secretary*.

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### Pharmaceutical Colleges and Associations.

*Massachusetts College of Pharmacy—Alumni Association.*—The annual meeting of this Association was held at Boston on Friday evening, May 19th. After the election of new members, the President, Prof. G. F. H. Markoe, delivered the annual address. The following officers were elected for the ensuing year: President, Prof. G. F. H. Markoe; Vice-Presidents, C. B. R. Hazeltine, J. T. Brown, Jr.; Treasurer, Chas. H. Bassett; Secretary, Thos. Doliber; Executive Committee, J. H. Dyer, Edward T. Kelley, John C. Lowd, George E. Raymore; Delegates to the American Pharmaceutical Association, Charles A. Tufts, Thomas Doliber, George H. Beale, Geo. E. Raymore, J. Howes Dyer. The members together with some invited guests then partook of the annual supper.

*College of Pharmacy of the City of New York.*—At a social meeting of the College, held June 15th, Prof. Chas. F. Chandler delivered a lecture on Celestial Chemistry as revealed by the use of the Spectroscope. After explaining the origin and composition of meteorites, and the probable composition of many of the heavenly bodies, the principles of the spectroscope were detailed and illustrative diagrams exhibited. After the close of the lecture the audience had an opportunity of viewing through an instrument the peculiar colored bands produced by the vapor of various metallic compounds.

*The Alumni Association of the New York College of Pharmacy* was fully organized by the adoption of by-laws at an adjourned meeting held June 7th. By vote of those present a prize of fifty dollars was authorized to be awarded to the graduating student presenting the best thesis. The Executive Board, at a meeting held June 15th, elected the following delegates to the American Pharmaceutical Association: Daniel C. Robbins, New York; John W. Ballard, Davenport, Iowa; John Best, Central City, Colorado; Hampden Osborn, Columbus, Miss.; Henry C. Porter, Towanda, Pa.

*The Maryland College of Pharmacy* held its annual meeting in Baltimore on Thursday, June 8th. After the usual business, the reading and disposing of the reports of committees, &c., several communications and papers were read, and various scientific subjects discussed. A number of old and more recent articles relating to pharmacy and the collateral sciences were on exhibition, such as books, apparatus, preparations, labels, &c.

*Alumni Association.*—The graduates of the Maryland College of Pharmacy held a meeting on Monday night, June 5th, in the hall of the College, for the purpose of organizing an alumni society. The following gentlemen were elected officers: President, W. S. Thompson; Vice-President, C. E. Dohme; Secretary, John H. Hancock; Treasurer, A. A. Kleinschmidt; Executive Board, C. E. Dohme, John Sohn, Julius Fahlen, and Charles Caspari.

*Chicago College of Pharmacy.*—We learn from the announcement of the lectures of this College, as given in the June number of the *Pharmacist*, that our friend Albert E. Ebert has been selected to fill the Chair of Theory and Practice of Pharmacy, in place of Prof. N. Gray Bartlett, who takes the Chair of Inorganic and Pharmaceutical Chemistry, formerly held by Professor Blaney.

*Mississippi Pharmaceutical Association.*—Sooner than we had expected, the pharmacists of the State of Mississippi have formed a State association. The meeting took place, at the city of Jackson, May 29th, Mr. M. F. Ash having been appointed President *pro tem*.

The Preamble and Constitution of the American Pharmaceutical Association was read, amended and adopted, and Mr. J. T. Buck, of Jackson, was appointed a Committee to draft the same for publication.

The Association then elected the following officers for the ensuing year:

President, M. F. Ash, of Jackson; Vice-President, P. Keefe, of Vicksburg; Treasurer, John T. Buck, of Jackson; Secretary, W. P. Creecy, of Vicksburg; Cor. Secretary, Hampden Osborn, Columbus.

After the appointment of a Committee of three, to prepare an address to the druggists of the State, it was resolved that the President is *ex officio* Delegate to the State Medical Association, and the State Medical Association was invited to send a delegate to represent them and co-operate with this Association.

On motion of Mr. Buck, all pharmacists in the State were requested to join the American Pharmaceutical Association.

The thanks of the Association were tendered to the Vicksburg and Meridian R.R. Co. for their kindness in passing delegates at half fare.

The Convention then adjourned, to meet at Holly Springs on Friday, the 8th day of April, 1872.

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*Pharmacy in Italy.*—The draft of a sanitary code, lately submitted to the Italian parliament, restricts the practice of pharmacy to pharmacists possessing a pharmaceutical diploma, but recognizes their right to locate wherever they please.

The Collegio Farmaceutico Italiano was organized at Verona on the 27th of March last, for the purpose of guarding the interests of pharmacy. Each of the six provincial associations (Lombardy, Venice, Sardinia, Central Italy, Naples and Sicily) elect a vice-president, and these the president. The present officers are Messrs. Colleoni of Venice, Mosca of Turin, Cicconi of Rome. Kernot of Naples, Monteforte of Palermo, Garofolletti of Milan.

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*Pharmacy in Russia.*—In view of the probability that the next meeting of the International Pharmaceutical Congress be held at St. Petersburg, the pharmaceutical society of that city urges the formation of a general Russian Pharmaceutical Society, to be inaugurated at about the time of the meeting of the Congress.

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## Editorial Department.

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**NINETEENTH ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.**—The official announcement of the president will be found on another page. Just ten years after the Association contemplated meeting there, it will meet on the twelfth of September next, for the first time west of the Mississippi river. In 1860, the Association appointed a committee of nine members residing in different sections of the country, for the purpose of promoting the attendance of members at the meeting in 1861. That meeting could not be held; of the committee then appointed, two are resting from their earthly labors, three have ceased to be members, while the remaining four are likely to attend the coming meeting; they are Messrs. S. M. Colcord, Boston; Prof. Parrish, Philadelphia; E. O. Gale, Chicago and W. J. M. Gordon, Cincinnati.

During the last ten years these meetings have continually increased in interest and in the number of the attendants, so that we may safely expect a large gathering. The exhibitions have attracted a growing interest, and from the exertions our friends in St. Louis have been making, we feel assured that the next one will likewise be a success. The local secretary, Mr. W. H. Crawford, will give all the necessary information.

The permanent secretary is endeavoring to procure a reduction of fare for members and their families living at a distance from St. Louis; all those contemplating to be present are requested to communicate with him, so that the requisite steps may be taken in good season.

**LIEBIG'S DIETETIC ARTICLES.**—Professor J. von Liebig publishes a card in the German Scientific Journals, in which he calls attention to a number of dietetic and other articles, to which the manufacturers have attached his name. Several of these preparations have also been introduced into the United States, and it is therefore proper that the pharmacists and physicians of this country should be put on their guard against *such bare faced dishonesty*. Some years ago, it will be remembered, Liebig suggested a food for infants which was noticed in the Amer. Journ. Pharm. 1865, page 226. The preparation is in the form of a coarse powder, and was experimented with by many physicians, but did not meet with universal favor. Soon after J. Paul Liebe, homœopathic apothecary of Dresden, Germany, introduced a preparation in the form of a thick syrup under the title of "Liebig's food for infants in soluble condition," and meeting with success, subsequently changed the name to "Liebe—Liebig's food for infants" (Nahrungs-Mittel für Säuglinge). Nobody could have reasonably found any fault with the former, as long as the manufacturer adhered strictly to Liebig's direction for preparing the soup; and the use of the latter name even may be defended. But encouraged by his success, Liebe put forth a number of preparations to which he attaches Liebig's name, among them a condensed milk, unfermented extract of malt, malt extract with iron, iodine, quinia, iodide of iron, etc. Professor Liebig declares in regard to these:

"I am in no connection whatever with J. P. Liebe at Dresden, and with other manufacturers of similar products; I have neither examined nor given an opinion on their preparations. I am not the inventor of a malt extract, nor have I given directions for preparing a condensed milk. J. P. Liebe and other manufacturers have arbitrarily connected my name with their preparations, without my consent and, of course, against my will."

This disclaimer is very plain and fair as far as its relates to the above mentioned specialties; but it is probably hurled also against the extracts of meat which, of late years, have appeared in the market connected with Liebig's name, for immediately afterwards follows the declaration: "The only preparation bearing my name with my permission, is the extract of meat manufactured in Fray Bentos, South America."

It is the same complaint or rather insinuation advanced several times during the last five or six years, as if a preparation made from the same material and by the same process, was not the same, whether made at Fray Bentos, in Australia, in Texas or some other place. Liebig's name, we dare say, will be ever used in connection with this extract of meat, and deservedly so; but it sounds strangely and smacks strongly of the usage of the patent medicine men with which our country is infested, when we read the *caution* printed on the circulars accompanying each jar of the Liebig company's extract. It is the only kind which we have been using for years, because the known terms of the contract, which are undoubtedly faithfully carried out, carry with them such strong guarantees of uniform quality, that this alone is sufficient to compensate for any difference in price. The greatest mistake, in our opinion, made by most of the manufacturers of Liebig's extract of meat, is that they neglect to enter into similar compacts with chemists of undoubted integrity, so that *every* batch

of extract manufactured by them would be examined after it is put up, which is the only way to insure the greatest possible uniformity. While Liebig's extract of meat may vary somewhat in the relative proportion of its constituents and even in color, physical properties alone do not afford a good and reliable criterion of its quality. Unobjectionable extracts of meat have been furnished by other companies than the Fray Bentos; but in most cases the assurance is wanting that the article is furnished always of uniform quality.

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MODERN ELIXIRS.—We publish in the present number the formulary of elixirs adopted by the Newark Pharmaceutical Association, to which we alluded in the preceding number, and take occasion to express our gratification at the position our friends have taken. There is ample opportunity and quite sufficient cause for pharmacists in other parts of the country to follow the example set by our brethren in Baltimore, Newark and some other cities. The abuses to which the introduction of these and similar preparations have led are quite numerous, and if some of them could be known to their full extent they would probably present an appalling picture.

The inception of this class of preparations probably arose from the necessity of presenting to the patient some bitter, nauseous drugs in a pleasing and palatable form; but of late years many parties in different parts of the country have applied their ingenuity to the invention of all sorts of elixirs, medicinal wines, and similar preparations, and unthinking physicians and pharmacists have promoted the introduction of these wares to such an extent that in some places they have become a perfect nuisance. A few bottles of such preparations left with the physician or apothecary, in many instances secure their patronage, the former prescribing, the latter recommending these particular manufactures, until in some offices it has become necessary to keep, for dispensing, preparations bearing the same name, but emanating from half a dozen and more inventors. This deplorable state of affairs can be counteracted in but two ways—either by the method adopted by the Newark Pharmaceutical Association, or by that inaugurated some years ago by the Maryland College of Pharmacy. The former endeavors to frame formulas, and rigidly adheres to them in all cases where a special make is not ordered; the latter regards them in the light of nostrums, because their mode of preparation is withheld, or, if published, yields a different article; hence the refusal to dispense any elixirs, &c., unless made by formulas approved by the College. This latter way, if more generally followed, would doubtless arraign them publicly in the position which they ought to occupy, and soon sweep them from the shelves of respectable pharmacies. We have no information how far our Baltimore friends have gone in this matter. We remember that six years ago they commenced with elixir of valerianate of ammonia, and afterwards supplanted commercial bitter wine of iron, which is not bitter. If they have not rested there, their continued labors ought to show some good results now.

But there is another side to this question, which shows, perhaps, a still more pernicious influence. Some of these preparations are so destitute of medicinal properties, but are so agreeable to the taste, that they may be taken for some



length of time, until gradually, through the alcohol they contain, they create an appetite for alcoholic stimulants. It is not our purpose to inquire to whom attaches the greater blame for *such* a result, which outweighs, by far, all the benefit that may possibly be conferred by the pleasing appearance and the agreeable taste. But we offer this observation as another reason for pharmacists—individuals as well as associations—to follow in the path pointed out above, before the greater part of our Pharmacopœia is supplanted by the elixirs, wines, cordials, &c., made and offered as specialties by a host of manufacturers.

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FRAUDULENT SUBSTITUTIONS.—We have been informed that the publication of Mr. Bullock's paper, on page 92 in the February number of this journal, has not stopped the fraudulent sale of muriate of cinchonia for sulphate of quinia, but that, on the contrary, it is being sold quite largely, under the label of Pelletier, Delondre et Levailant. Our readers are requested to examine all quinia that may be offered to them under the above garb; in fact, it is advisable, in view of the counterfeiting perpetrated, not to trust to *any* label, unless the quinia be obtained directly from the manufacturers.

Such a course seems to be the more imperative since lately another fraudulent substitution has occurred in New York, and is quite likely to victimize the unsuspicious. Our informant states that *sulphate of quinia has been sold for sulphate of morphia*. It is offered in original 1 oz. bottles, put up by Atkinson of London, the quinine label being removed by the impostor, and a sulphate of morphia label is substituted. This fraud must necessarily be detected even by the tyro, in consequence of the sparing solubility of the quinia salt. But, if the above counterfeiter of Pelletier's label should embark in this new enterprise, the test of solubility would be insufficient. We therefore repeat our caution expressed above, also for morphia, and suggest the examination of each sample, by proving by the well-known tests the presence of morphia and the absence of quinia and cinchonia.

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NEUES JAHRBUCH FÜR PHARMACIE.—In the advertising sheet of the present number appears the advertisement of the above named journal. The pharmaceutical intercourse between America and Europe is continually on the increase, and the influence of one civilized country upon another is felt more and more every year. It is therefore desirable that the pharmaceutical literature of each country should become better known abroad, and it is with this end in view that we direct the attention of those pharmacists conversant with the German language, to one of the best edited pharmaceutical journals.

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THE NEW YORK BOARD OF EXAMINERS will shortly organize. Mayor Hall has appointed Messrs. Wm. Graham, Theobald Frohwein, Dr. R. O. Doremus and Dr. C. M. O'Leary, the Examining Board under the law which we took occasion to criticize in our last number. The appointments, as far as we are acquainted with the gentlemen, are more satisfactory than the law itself, and reflect credit upon the Mayor. Mr. Graham is in charge of one of the stores of the firm of Hegeman & Co. Mr. Frohwein is a graduate and now one of the

officers of the N. Y. College of Pharmacy. Dr. Doremus was formerly Professor of Chemistry in the same college. We know nothing about Dr. O'Leary's pharmaceutical accomplishments.

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*The Chemical Nomenclature of the Pharmacopœia, with Suggestions for its Revision.* By Professor Attfield. Including opinions on the proposed system by chemical and pharmaceutical authorities; and additional remarks by the author. Reprinted from the *Pharmaceutical Journal* for April 8th, 15th and 29th, 1871.

The subject of this paper is an important one. It proposes to do away with the necessity of changing the chemical names of the Pharmacopœia hereafter to meet the chemical views and theories that may be held at the time by the majority of chemists. The author's views are happily expressed in the following passage: "I believe the time has come when, by making a few slight alterations in the terminations of a few of our chemical names, we shall have a system of pharmaceutical nomenclature which, while perfectly harmonious with, is quite independent of, scientific chemical nomenclature, and which therefore contains greater elements of permanence than any yet adopted."

The views of the chemists of the present day favor the unitary system of nomenclature and notation, and the slight changes proposed by Dr. Attfield, though not identical, are nevertheless in harmony therewith, and would be consistent with the binary system if chemists should ever change their views again in favor of the latter. The idea underlying these propositions is the uniformity of composition of salts, whether the acidulous radical contains oxygen or not, and that the basylous radical in both kinds of salts is the same, namely, the metal, and not the oxide of the metal. Hence we shall have, according to Dr. Attfield's proposition, Sodii sulphas, just as we now have Sodii chloridum, &c. The proposed changes are in accordance with the nomenclature at present in use in our Pharmacopœia for the salts of the heavier metals. Here we have, for instance, sulphate of zinc, and not sulphate of the oxide of zinc, as it now ought to be, to conform with the corresponding salts of the alkalies and earths.

It will be seen that these changes merely involve an alteration in the termination of the names, and, since physicians and pharmacists nearly always abbreviate these terms, no change will be required either in the labels of the shop bottles, or in the writing of prescriptions. On the other hand, however, they would facilitate to the pharmaceutical student the understanding and appreciation of the chemical processes, composition and decompositions.

We also agree with the author, that the present pharmaceutical names of certain chemical compounds, which are definite and universally understood, do not require any change to indicate their chemical composition; thus alum, chalk, lime, magnesia, &c., are proposed to be retained. Some exceptional nomenclatures are also considered, and, while in regard to these the views may differ, they are of minor importance and do not interfere in the least with the adoption of the main principle involved in these propositions.

Our views coincide in principle with those advanced by Prof. Attfield, and we heartily commend them to the consideration of the Committee having in charge the revision of the United States Pharmacopœia.

*American Manures, and Farmers' and Planters' Guide.* Comprising a description of the elements and composition of plants and soils, the theory and practice of composting, the value of stable manure and waste products, &c.; also, chemical analyses of the principal manufactured fertilizers, their assumed and real value, and a full exposé of the frauds practiced upon purchasers. By James Bennett Chynoweth and Wm. H. Bruckner, Ph. D. Philadelphia: Chynoweth & Co., 1871. 12mo, 260 pages. Bound in cloth. \$1.50.

The authors say, in the preface to this little volume: "It has ever been considered the duty of each member of a community to do all in his power to expose and redress existing wrongs, especially when those wrongs affect the vital interests of all. . . . We shall unmask practices that have been backed up by favorable reports and artfully designed statements, falsely claiming to be benefits conferred on the community, and which, from a want of knowledge to distinguish real from imaginary good, have passed currently as such." These passages explain the ultimate object of the book, namely, to prove that none of the fertilizers in our markets contain enough fertilizing material to warrant the price charged for them. Thus the fertilizing value of one article sold at \$56 per ton is calculated to be \$37, while another article sold at \$40 is worth only \$6. These calculations are based upon actual analysis—which is briefly described—of samples purchased directly from the manufacturers or their agents, and upon values which in Chapter V are estimated to yield to the manufacturer a profit of 33 per cent., figures which, from the experience of one of the authors as superintendent of a manure factory, may be assumed as correct.

With the results of their analyses of American manures, the authors contrast the composition of some German superphosphates, showing that, under the inspection system, their value as fertilizers is much greater. It is interesting to note that every purchaser of not less than half a ton of the manure manufactured at Mannheim, Germany has the privilege of having it analyzed without expense to himself, by the President of the Agricultural Experimental Station at Karlsruhe. We are not partial to the appointment of inspectors here, because such offices are too readily dragged down into mere political sinecures; but we believe that the manufacturers owe it to themselves as well as to their customers to make arrangements with honest and competent chemists to undertake such examinations free of expense to the purchaser of a certain quantity.

The statements and certificates contained in the circulars of the manufacturers are contrasted by the authors with their results and calculations, and often sharply criticized.

The book is not merely of ephemeral value, but the six first chapters contain much information of lasting value to the farmer, and are written in such a clear manner, divested as much as possible of scientific language, that they can be readily understood.

*Report of the General Committee of the Cincinnati Industrial Exposition*, held in Cincinnati, under the auspices of the Ohio Mechanics' Institute, Board of Trade and Chamber of Commerce, from Sept. 21st to Oct. 22d, 1870. 8vo, 400 pages.

The reception of this report is acknowledged, together with the announcement of the exhibition, to be held in the same city for one month, commencing Sept. 6th next. Class XVI of the last exhibition comprised chemicals, paints, oils, soaps and candles, also pharmaceutical preparations. The judges were Dr. J. S. Unzicker, Prof. E. S. Wayne and Chas. C. Reakirt.

*The Eye in Health and Disease*: being a series of articles on the anatomy and physiology of the human eye, and its surgical and medical treatment. By B. Jay Jeffreys, A.M., M.D., &c. Boston: Alexander Moore, Lee & Shepard; New York: Lee, Shepard & Dillingham. 1871. 8vo, 120 pages, with 30 illustrations. Bound in cloth. Price, \$1.50.

The book consists of a number of articles contributed at first to a journal, and intended for the instruction of the laity in reference to the care of the eye, a purpose which it is well calculated to accomplish. The author, who acts as ophthalmic surgeon to several hospitals, and is lecturer on the eye at Harvard University, is perfectly familiar with this subject, and we believe that even the professional surgeon will find in it many new and interesting facts.

*The Modern Operation for Cataract*. A lecture delivered at the Harvard Medical School April 5th, 1871, with an analysis of sixty-one operations. By Hasket Derby, M.D., University Lecturer on Ophthalmology and Surgeon to the Massachusetts Charitable Eye and Ear Infirmary. Boston, 1871. 8vo, 24 pp.

We have been much pleased with the perusal of this lecture, which gives a lucid account of the history and practice of Professor von Graefe's method of operation for cataract, which was named by that celebrated surgeon, at first, the "modified," but afterwards the "peripheric linear extraction." An analysis of 61 (including his earliest) operations performed by the author is appended. Of this number three only proved to be failures, two of these having occurred in the first period of his practice.

#### OBITUARY.

DR. GEORGE A. C. STÄDELER was born at Hanover, Germany, March 25th 1821. He served an apprentice- and clerkship to the apothecary business, and subsequently studied botany, and chemistry at Goettingen. As the assistant of Prof. Wöhler, he commenced, in 1847, his researches on the production of chloral from starch, which of latter years attracted much attention. (See Am. Journ. Ph. 1870, p. 177.) For several years he devoted much time to researches in physiological chemistry. In 1853 he was selected to fill the chair of general chemistry at the University of Zurich, made vacant by the death of Loewig; and, in 1855, when the Swiss "Polytechnicum" was founded, he was also elected Professor of Analytical Chemistry at this institution, where he labored with great success until, in the fall of 1870, he found it necessary to resign his position in consequence of disease of the heart, which had gradually developed itself for about seven years. He died at the residence of his parents, both surviving, at Hanover, on the 11th of January last, having nearly complete his fiftieth year.